

Derelict by DUNCAN LUNAN • After You've Stood on the Log at the Center of the Universe, What Is There Left to Do? by GRANT CARRINGTON • Upping The Planet by BARRY N. MALZBERG • Found in Space by R. MONROE WEEMS • What Was That? by F.M. BUSBY • Local Control by SANFORD ZANE MESCHKOW

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MAKES SO STRAIGHT PASSES AT DICE

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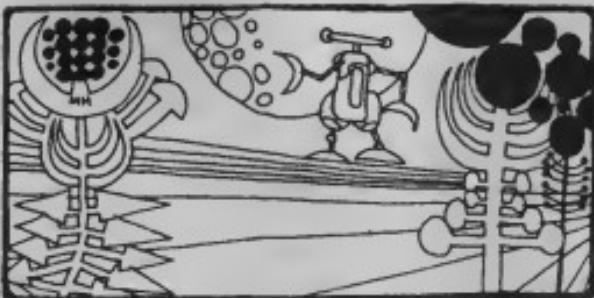
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**TED
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EDITORIAL

REFLECTIONS ON THE ENERGY CRISIS: I drive a 1961 Volkswagen "bug." Until recently, I averaged 30 miles per gallon on long-distance trips and between 25 and 30 mpg locally. Recently I drove to New York City and back. I averaged less than 25 mpg on that trip, and my local mileage has fallen to around 20-23 mpg. Why? Because, in order to "save gasoline," the speed limits have been cut from 60, 65 and 70 mph to 50 mph on the interstate highways, and from 55 and 50 mph to 40 and 45 mph locally.

In the last year the cost of gasoline in this area has risen from under 30¢ a gallon to nearly 50¢ a gallon—in most cases an increase of at least 50%.

President Nixon—who still faces impeachment for alleged criminal acts in the conduct of his presidency—has ruled out gasoline rationing for the time being, but his advisers have leaked word that gasoline may cost as much as a dollar a gallon within a year.

Why?

According to Ralph Nader (in an article published in the Washington *Star-News* for November 18, 1973),

"President Nixon's statement on the energy situation placed far more burdens on consumers than on industry. Together with his legislative proposals on the energy problem, the message adds up to a windfall for booming corporate profits and a shortfall for the consumer's health and pocketbook.

"To start with, one would never learn from the President's address that industry and commerce use fully 70 percent of the energy supply. Consumers absorb the remaining 30 percent principally in home and personal transportation uses.

"Given these facts, it is far more administratively workable and fundamental to focus on the massive industrial and commercial waste of energy than to rely on prompt changes in wasteful consumer habits so long encouraged by the auto, petroleum, air conditioning, electric and other industries."

Nader then points out that current automobiles are getting an all-time low in gasoline mileage (but fails to note that this is primarily due to the efforts of his own lobby for heavier, "safer," cars with gas-

(con't. on page 119)

**Secrets
entrusted
to a
few**



The Unpublished Facts of Life

THERE are some things that cannot be generally told — *things you ought to know*. Great truths are dangerous to some — but factors for personal power and accomplishment in the hands of those who understand them. Behind the tales of the miracles and mysteries of the ancients, lie centuries of their secret probing into nature's laws — their amazing discoveries of the hidden processes of man's mind, and the mastery of life's problems. Once shrouded in mystery to avoid their destruction by mass fear and ignorance, these facts remain a useful heritage for the thousands of men and women who privately use them in their homes today.

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TOTAL ECLIPSE

JOHN BRUNNER

John Brunner, whose novel, "The Stone That Never Came Down," only recently concluded here (October and December, 1973), returns with a new and very different two-part novel. This time the setting is far removed from Earth-Sigma Draconis III—and the problem is a basic one: how to deal with the remains of an alien culture when even basic assumptions may be suspect . . .!

(PART ONE)

Illustrated by GRAY MORROW

*O dark, dark, dark amid the blaze of noon,
Irrecoverably dark, total eclipse
Without all hope of day!*

—Milton, *Samson Agonistes*

I

. . . AND THERE IT IS!

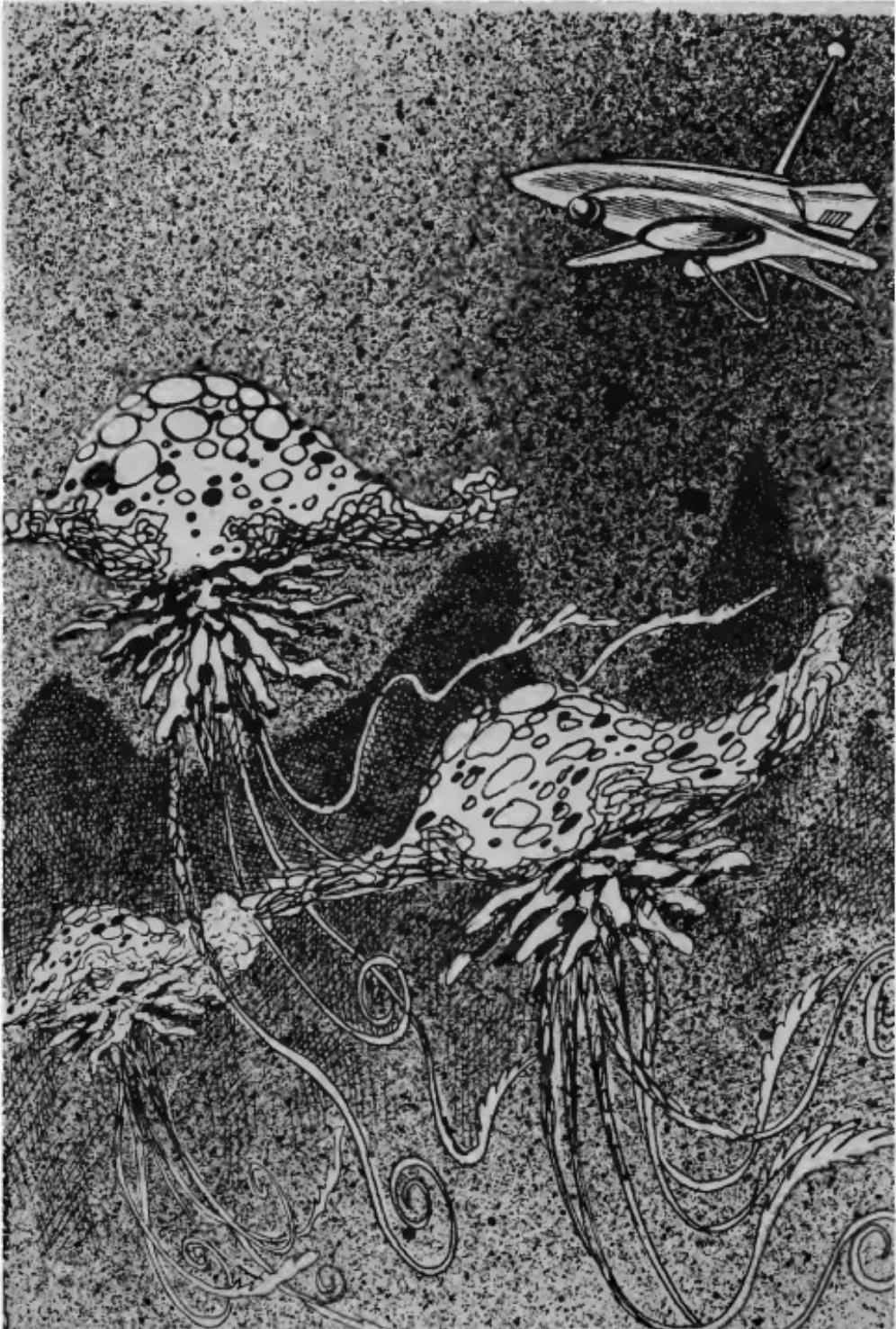
Brilliant as a blob of quicksilver it shone on the grey-chalk oblate of the planet's moon: a jewel amid a ruin of decay. From this distance, thousands of kilometres away, it was minuscule. No details could be made out such as were to be discerned in the pictures they had all studied at home on Earth.

Nonetheless to see it in real time was very different from looking at photographs. It was

right to plot the course for *Stellaris*, between her emergence from qua-space and her approach to a landing on Sigma Draconis III, so that for these few minutes the light of the local star would glint off that incredible artefact and waken in the minds of those arriving here for the first time an echo of the shock experienced by the explorers who had chanced on it back in 2020, on what would otherwise almost certainly have been the last of man's attempts to visit the stars in view of the disappointments of Proxima, Epsilon Eridani and Tau Ceti. . . or at any rate the last in the foreseeable future.

But of course finding that thing . . . !

A shiver crawled down Ian Macauley's spine. A curl of his untidy red hair, bending over to



touch his freckled forehead, felt like a ghostly alien caress, and he shot up his hand to brush it aside. Against his will—no, more exactly: without conscious intention—he found himself reciting dry statistics under his breath.

Diameter thirty-six point oh-five kilometres. Wall-height one point one-nine kilometres averaged. Thickness of the mirror—

With an effort he cut short the recital of bare stark figures and switched to words, which he cared for a great deal more:

They, whoever, whatever they were, came to their moon and smoothed and rounded and polished a whole vast crater and made it into the largest telescope imaginable. And they're dead. They've been dead for a hundred thousand years. Yet the first trace we can find of them was only three thousand years earlier; it's as though the weight of a thousand centuries has compressed the whole of their history, come to that the whole of their evolution, into a layer no thicker than a little seam of coal, memorial to the sprouting, hey-day and downfall of a million trees!

In spite of which, should they so choose these later-comers, these humans from Earth, could wipe away the meteoritic dust which had accumulated on the mirror of the telescope, and mend half a dozen breaches caused by larger-than-usual chunks of cosmic garbage, and substitute their own inanimate electronics

for the—the whatevers that its builders had employed, long desiccated into incomprehensible black shreds . . . and the telescope would still be usable.

"It's unbelievable!"

He had not meant to speak aloud, nor did he realise he had done so until a caustic voice from behind him said, "Yes, I'm sure it is. But I'd like a glimpse of it too, please!"

Hastily he stepped aside from the viewport, muttering apologies, and a trifle relieved that his successor was no one other than plump, plain, likable Karen Vladý, the civil engineer among their party.

She had been the first of his companions to whom he had spoken directly. On the day of his arrival at the Sigma Draconis Briefing Centre in Canberra, Australia, he had been horribly frightened; he was still scarcely able to believe either that the famous Igor Andrevski, the chief archeologist out here, had asked for him by name, or that he had had the courage to say yes.

Though I should have realised I had no need to worry, shouldn't I? The prospect of being cooped up in the ship like this felt dreadfully daunting, yet everything has gone very pleasantly. . . or almost everything. And during my stay here I may in some ways be better off than I'd have been at home: one of thirty people whom anybody would be proud to call a friend, brilliant hand-picked experts among whom I

can expect to feel instantly at ease. On Earth, in a city or even at a university, they'd be diluted among thousands of other people who might be boring, or annoying, or a nuisance!

He was by temperament a solitary man, but if he had to live in close proximity with others, these were exactly the sort he would have chosen. It was that point which his first encounter with Karen had started to make plain to him.

She had heard him muttering his name as he presented himself at the centre's reception desk, and come up to him and said with characteristic forthrightness, "So you're Ian Macauley, are you? What's it like to live inside your head?"

Taken aback by the directness of the question, he had replied, "Oh...! Think of a haunted house!"

Which was something he had occasionally confided to intimates, but never before to a perfect stranger.

A couple more of his then-unknown colleagues had been in earshot, and mistaken his answer for a flip joke. So the first impression he'd made on them was that he had a dry sense of humour. But Karen had not missed the crucial fact: the statement was literal. He appreciated that.

So now he was actually here, the best part of nineteen light-years from the Solar System, to

take his turn at wrestling with a riddle that had defied Earth's finest thinkers for the best part of a decade.

It's a crazy paradox, that we should know so much about them, and so little! We know, roughly, what they looked like—bodies like two matching crab-shells one above the other, four short walking-limbs, two grasping limbs, all tipped with tubular claws down which ran nerve-channels, and composed of a modified version of their hide-like skin, as are human nails. We know, or think we know, that they were possessed of a sense we don't have, though many fishes do: the ability to perceive electromagnetic fields. We suspect the many crystals we've found still impregnated with such fields, after the manner of a tape-recording, were their counterpart of inscriptions. Which is why I'm here. Conversely, they seem to have lacked means to detect sound, barring perhaps the very loudest and coarsest. We know they had a high science, which argues a complex culture, also evidenced by their quite large city-sites—but why are there not many more of those? Certain hints suggest they had a religion, or religions; maybe, for all we can tell, they had the equivalents of poetry and music, expressed in terms of infinitely subtle electrical fields. What can it have been like to live in a world without sound, but where your whole being resonated to the ebb and flow, the very heartbeat, of the planet and all the creatures on it?

He clenched his fists, forcing his nails deep into his palms.

How can I make myself comprehend the utter non-humanity of those who built that telescope? Because if I don't succeed in that, my visit, and all the agonies of doubt I sweated through before deciding to accept the invitation, and at least three, possibly five years of my life, will be completely wasted. Oh, how I'd hate to be rotated home and leave the mystery unsolved—how I pity those who thirty days from now will face that fate! The only thing worse will be if it turns out they've solved the problem in the last two years!

THERE WERE THREE VIEWPORTS in the control cabin of the *Stellaris*. During most of each voyage they were irrelevant. In qua-space there was no energy-propagation in any form human eyes could detect. But it was worth having them. The designers had been put to immense trouble to compensate for the stresses they induced in the hull; extra struts and girders had had to be included which increased the vessel's dry mass by over four per cent. . .but for the privilege of seeing, at the beginning and end of each journey, the naked universe with the naked eye instead of solely via TV relays, it was a negligible price to pay.

That, at any rate, was the opinion of her commander, Colonel Rudolf Weil.

The *Stellaris*'s crew likewise

numbered three, and during most of each voyage they were as irrelevant as the viewports. No human being could hope to match the nanosecond reflexes involved in making a Big Step between the stars. Above all, it took machines to ensure that when it was time to dissipate the phenomenal energy acquired on the way to hyperphotonic velocities there was nothing in the ship's path of emergence larger than a grain of dust. Even so, no matter what exit angle was chosen, there were always solar flares and minor perturbations in the orbits of local asteroids and comets.

He had sometimes mentioned to close friends a dream that haunted him concerning the disappearance of the Draconians: the possibility that they had been less lucky than mankind when they made their first experiments with hyperdrive. He knew, intellectually, that if the reason for the aliens' extinction were to be found in some unlooked-for side-effect of flying a ship faster than light—as, for instance, a destabilisation of the sun—evidence to prove it would have been found by now, printed in moonrock as though in a block of photographic emulsion. And there was no evidence; there were very nearly no clues. Yet the dream recurred, over and over.

Right from the beginning humans had been cautious about

qua-space. It wasn't only a matter of trespassing into a mode of existence which all the classic theories regarded as forbidden. Theories could be scrapped, and inevitably were, on the day when a tiny five-ton package of instruments arrived in Moon-orbit a detectable fraction of a second ahead of the signal saying it had been dispatched from Earth-orbit.

More to the point, beyond doubt, was the fact that it had been so damnably expensive to build the starship. The planet Earth possessed exactly one interstellar craft, and this was it, and it strained mankind's resources to the utmost to send her out and back once every two years across what by galactic standards amounted to a tiny little distance.

Maybe that was the sort of thing that handicapped the aliens, but it hit them sooner. I remember last time Valentine Rorschach was asking why we've found just one of so many things: one wrecked and sunken ocean-going ship, one large flying-machine, one and only one of many thousands of types of artefact. . . But of course so much of their civilisation lies buried under sediment and peat and avalanches that had it not been for the telescope we'd never have suspected its existence.

Watching the passengers as they lined up to take their turn at the viewport currently facing the moon, he felt a tremor pass

through him, recalling how shaken he had been at his own first sight of that brilliant spark. Then he had been only a captain—not that rank mattered much when it came to doing something that had never been done before. In those days *Stellaris* had been commanded by Rear-Admiral Boris Ivanov, but he had had to retire after that trip; there was too loud a murmur in his heart-valves. Some people had suggested the ship be converted to crewless operation; there was no theoretical reason why it should not be launched and landed automatically. But it remained true that no machine could deal with the passengers' problems, let alone the question of whether people wanted to be shot from star to star like dead packages. So there were still crew in charge.

How do these passengers really regard me, the ferryman—the Charon who may have conveyed them on their last voyage? There have already been two deaths here, on this alien planet. We may be about to learn of more.

For himself, there would certainly never be another Big Step after the homeward leg of this trip. He had grown prematurely old, thanks to the radiation of space; his round face was seamed with wrinkles like a shrunken apple, and there was more grey than brown in his hair. If the *Stellaris* did come back, even if only to evacuate the planet, he

would not be her commander.

By rights, his successor ought to be Captain Irene Bakongu, the older, the more experienced, the senior of his companions.

The way things are going back on Earth, though, that may not count. A shame, because if it's going to be done at all—which is by no means certain—it should be done properly.

And because Irene was both female and black, the choice was more likely to fall on Lieutenant Gyorgy Somogyi.

Who's less well-qualified and far less quick-thinking. High on the list of possible explanations for the extinction of the Draconians, so they tell me, is the idea that it was due to some fundamental flaw in their nature. All too easily some stupid irrational prejudice could get rid of us too, couldn't it? Thinking of which...

It dawned on him that only nine of their ten passengers were present, and before he could stop himself he had asked aloud, turning to Irene: "What's happened to the general?"

At which there were visible shudders from everybody and a moment of frozen silence, broken by a hateful rasping voice from the doorway of the control cabin.

"Were you referring to me by any chance...Colonel?"

II

NOT WANTING to obstruct anybody else waiting for a precious,

perhaps never-to-be-repeated sight of the alien telescope, Ian had withdrawn from the viewport, threading his way between the three control chairs and the close-packed bodies of his companions, and taken station right beside the doorway. Now he withdrew a fraction further still: into himself.

I guess it's a sick comment on humanity that the thing which binds me most closely to these comparative strangers, crew included, is not shared interests but shared detestation. We all loathe this horrible bastard!

But he did his best to maintain the formalities, and gave a polite nod as the late-comer pushed past: General José María Ordoñez-Vico, small and neat and dapper with a tiny black moustache, a bachelor aged 48, the sole person aboard or indeed ever transported by the *Stellaris* who had declined the plain practical clothing traditionally worn in space—a zip-fronted blouse with big pockets, loose comfortable pants, and elastic sandals over which spacegear could be drawn in emergency—and insisted on sporting his military uniform complete with rank-badges, medal-ribbons and epaulettes. When Karen had relayed to Ian a rumour that the general had only with difficulty been dissuaded from bringing his ceremonial sword, he had simply chuckled, assuming it to be a happy invention. Now, after

thirty days in space with him, he was prepared to believe the charge was true.

Paradoxically, however, if this man had not been allowed to displace someone more valuable, the *Stellaris* would never have been launched on this trip...and the thirty people currently on Sigma Draconis III might have been abandoned to struggle on alone. And no doubt die out as completely as the natives.

Well—we think there are thirty people here. By now there may be fewer... In an upside-down way, that may be an advantage. Ten members of the base staff, presumably, have been preparing themselves to be rotated home. There will only be space for nine after all...that is, unless he orders the closure of the base, and on her last-ever Big Step the Stellaris carries a record complement of forty-three. And leaves everything behind except their food, their water and their air.

THE REASON for Ordoñez-Vico's presence was, in Ian's view, terrifyingly typical of just such a flaw in the nature of mankind as was now suspected of having betrayed the species which long ago had travelled from Sigma Draconis III to the local moon...and apparently no further.

He was the commander-in-chief of the Bolivian Military Intelligence Service.

From the first moment star-

flight was found to be possible it had been obvious that the resources of only the very richest nations could support a faster-than-light ship. To build the first ocean-liners strained the then-wealthiest countries; to operate international airlines was at first the privilege of the fortunate few...and building the planes to provide them remained for decades a near-monopoly; to land humans on the Moon was, also for decades, the unique accomplishment of the nation that could afford the computers to back up the astronauts, the precision engineering skills which reached the point where 99.99% reliability would have resulted in about 15,000 things going wrong, and the wastage inherent in training dozens of reserve personnel at enormous cost for the sake of being certain that on the day of the chosen launch-window at least one crew would be intact.

It would just about—just barely—have been possible for one country to build and fly a small starship: perhaps with a crew of four and minimal equipment. It would also have been within the compass of a consolidated cluster like Common Europe, or the leader of a loose economic alliance like Japan.

But it would have been very, very unpopular to do that. Articulate, indeed vociferous, the citizens of less fortunate countries had long been objecting to the way a pyramid of glorious

achievement was casually built on a foundation of human rubble. The eagle-keen eye of a billion-dollar satellite might look down on the corpse of a labourer who had dug ore for it on starvation wages, and was dead.

Nonetheless, the situation had improved considerably since the last world-wide recession. The climate was right for some grand gesture. So the idea dawned with all the brilliance of the first sunrise following an Arctic winter:

Why not a UN Starflight Fund, to which each country would contribute in strict proportion to its GNP?

The suggestion was eventually approved, and the designers of the projected ship heaved a sigh of relief and stopped worrying about cutting everything to the bone. The funds voted were enough to finance a ship with three crew and well over a hundred tons of non-permanent mass—a jargon phrase meaning cargo and/or passengers with the means to support them.

Three years building and testing led to three years of disappointing, fruitless expeditions to barren systems that added much to the store of abstract knowledge, nothing to the rapidly dwindling resources of overpopulated, seething Earth.

The cost mounted. Each trip pointed the way to refinement and modifications; each caused some trifling damage, so that one "might as well" incorporate an

improvement as simply repair the faulty components... and each time the improvement cost more, called for subtler techniques, laid a heavier burden on the Starflight Fund.

People began to ask, "Why bother?" And there was no good answer—until the last grand fling, the shot to a star more distant than before but resembling Earth's sun more nearly than its predecessors, revealed the terrifying fact symbolised by the incredible telescope.

There had been a high civilisation at Sigma Draconis.

It too had achieved spaceflight.

And it was gone. Vanished. Disappeared.

Whence the fearful, haunting question: *is the same likely to happen to us?*

The immediate impact of the news was predictable. A special levy was raised for the Starflight Fund. Ten carefully-chosen experts, together with the most compact and most advanced equipment both to keep them alive and to conduct research with on arrival, were hurriedly flown to the mystery planet.

The sense of alarm endured long enough to finance another visit, and another, and, by the skin of humanity's teeth, another yet. This was, to be precise, the fifth expedition. The first had been exploratory, in 2020; the next landed the nucleus of a permanent ground-staff in 2022; the staff had been added to, ten at a

time, in 2024 and 2026; now it was 2028 and this was the first rotation-trip, the first time people who had been here—and who had survived—since 2022 were due to be taken home.

But the trip was unique in another way, too. Never before had the ship been late. And it might become unique in still another respect, with the discontinuation of the base. It was not exactly in the lap of the gods, that...not unless there was a god called Ordoñez-Vico.

THE APPREHENSION had diminished. The sense of frustration had grown, as the third and fourth expeditions reported no progress. And then, all too typically...

There had been famine in half a dozen densely-populated countries, all of whose governments were controlled by greedy shortsighted thoughtless men whose first reaction when the starving mobs came battering at their gates was to accuse a scapegoat. The Starflight Fund was an obvious target. Rumours took their rise: *here's another way the rich are cheating the poor, for if you hadn't had to subsidise the Fund there'd be another million in the treasury to spend on food!*

No mention, of course, of the fact that the Prime Minister had made his fortune by hoarding rice during the previous famine, or that the President's brother owned the nation's largest

pharmaceutical factory and was taking a profit of seventeen hundred per cent on every ampoule of niacin, ascorbic acid and B12. That news was stale.

And then another, different, more dangerous story began to spread:

Out there they've found the weapons that killed the native race. They're coming back to threaten you with them—they're coming back to rule the world!

How anybody, no matter how ignorant, could take that seriously, was a question that defeated Ian, let alone the problem of how sophisticated delegates to the UN could refer to it in their speeches and not burst out laughing. Still, it had happened...and that was why General Ordoñez-Vico had been given power to order the abandonment of the Draco base, and the abolition of the Starflight Fund, if any hint—clue—trifling suspicion triggered his all-too-obvious latent paranoia.

AND HERE HE WAS, scowling as usual at Captain Bakongu whom he made no secret of hating both as a person and as a symbol—hailing as he did from an élitist, racialist, masculinist background—and saying to Colonel Weil, “Tell me something! Does this detour you’re making, like the pilot of an airliner bound for Rio who wants to show off the Sugarloaf, form part of your prescribed schedule?”

There was electric tension in the filtered processed air. But Weil's answer was perfectly polite...at first.

"Yes, general, it's a regular feature of our visits. In fact"—and here malice stalked in, a twist of his voice as it were—"I'm surprised to hear you ask. I gathered that you'd made an exhaustive study of the records from all our trips."

Ordoñez-Vico responded in a manner they were all familiar with. He drew from his jacket a flat object, little larger than an old-fashioned pocket-watch though a great deal heavier and square instead of round, and consulted the dials on its face with an important air.

It was, so the general had repeatedly declared, the most advanced lie-detector ever devised, capable of catching out untruths by comparing the sonic profile of the speaker's words with his or her bodily secretions. During the thirty days since they left Earth hardly one conversation with him—not that there were many all told—had been completed without this gadget being produced for examination.

"It's not unknown for records to be falsified," Ordoñez-Vico said. "But I am relieved to note that on this occasion you are telling the truth." He re-pocketed the device. "Very well. I too require to see the vaunted telescope left behind by the alleged native species."

At that everyone else in the cabin gasped: a wordless chorus of incredulity.

"You honestly think somebody invented the Draconians?" a voice blurted...and, as all eyes turned on him, Ian blushed almost as red as his caroty hair. Weil repressed a chuckle. Most of his passengers this time, like most of those on earlier voyages, were academic types, accustomed to the formal hierarchical environment of a university. Ian was a refreshing contrast. He had spent most of his career burrowing into the ground at remote archeological sites, or sitting up late alone in an isolated forest hut, refusing to see or speak to anybody as he re-invented from first principles the reasons why, in a long lost civilisation, people had chosen *this* rather than any other symbol to convey *that* of all possible meanings.

If only he were not so shy. . . . Of all the people I've Charoned here, I'd put my money on Ian to unravel this mystery. I'd have liked to get to know him a lot better.

But there were other and more immediate problems on Weil's mind. He said crisply, "General, there is nothing alleged about the Draconians. They did reach their moon; they did build their 'scope; they did disappear! It will give me great personal pleasure to walk you around some of the sites that have been discovered and hear your version of how they were faked!"

He put an infinitesimal stress on the word *walk*, and there were discreet smiles on several faces. Ordoñez-Vico wore the softest and most delicate style of shoes. It was hard to picture him on an Army route-march, or up to his knees in a swamp.

But the irony was lost on him. He said, "I shall indeed accompany you, colonel. I don't intend to let you do anything on this planet without my knowledge." And appended with a glower at the rest of the passengers: "Nor any of you, either!"

What might have flared in seconds into a blazing row was fore stalled by a faint, faint sound from the communications panel and a sharp exclamation from Lieutenant Somogyi who was sitting before it with earphones on.

"Colonel, we have voice-contact with the base, and they're asking why we're so late."

"Don't answer that!" Ordoñez-Vico barked. "Do no more than acknowledge!"

Somogyi—still under thirty, making only his second trip, engagingly youthful in many respects despite the sinister cast of his gypsy-like features and his undeniably formidable intellect—looked blank, and thereby tempted the general into explanations.

"I want to catch them before they have a chance to cover up what they're really doing!"

"In that case"—prompt from Captain Bakongu at the naviga-

tion panel—"all passengers should go immediately to strap-down stations. If we line up for an approach now we can save a full braking-orbit. We could be down in about forty-four minutes."

"There's your chance," Weil said dryly. "Return to your cabins quickly, please."

Fury and the urge to appear consistent struggled in Ordoñez-Vico's face, but after a few seconds he swallowed his annoyance and gave a nod.

"Yes, colonel. You are correct; we should make our landing right away."

AND WHEN the passengers had gone, escorted by Irene, Weil said more to the bulkheads than to Somogyi, "I wouldn't care to set the record he's about to: being the first man hated by literally everyone else on a whole damn' planet!"

III

AFTER THE SHOCK of finding the telescope, the first human visitors had judged it politic to do nothing whatever to offend its builders. Though they could spot no lighted cities on the night side of the planet, that meant nothing; the natives might have evolved beyond the need for them, or bypassed it. There was nothing but stellar static on the radio-bands, but that was equally irrelevant; there might

be long-distance communications techniques humans had not yet discovered. And at first glance it had been plain that the telescope was very, very old.

Weil, the junior member of the crew on that particular voyage, had snapped at a persistent reporter after his return, "Damn it, we expected to meet them, remember! For all we knew it could have been like sailing the *Pinta* into Greater Hamburg!"

Which would have made a telling point but for the fact that the reporter was from Singapore and had not been exposed in school to the details of Columbus's explorations. He asked how to spell *Pinta*, consulted his portable reference computer, and inquired with no discernible trace of embarrassment what a 20th-century sales slogan coined by the British Milk Marketing Board had to do with interstellar travel.

ANYHOW: it was obvious at once that this world's ecology must be similar to Earth's, and that obliged the crew to sterilise their landing-site. The only possible spot to touch down appeared to be on a half-desert island south of the equator, where a freak of geology had created a high plateau of barren rock and wind-sculpted sand, and a freak of meteorology kept the sky clear of cloud even during what their computers determined to be the counterpart of a monsoon season

in these latitudes. Moreover, on the plateau, the partial pressure of oxygen was very close to Earth-normal. This was a fractionally larger planet, with a somewhat smaller and more distant moon; thus at sea-level its air was richer than humans were accustomed to... though incontestably breathable.

The landing-site chosen for such admirable, commonsensical reasons had grown into the Draco Base. Cathy Polyzotis wished desperately she could be any place else.

Tempers were fraying and there were dismal looks on all the faces around her. Small wonder. The *Stellaris* was not a week late, not ten days late, but twelve and a half, and people were openly starting to predict that she would never come back: that there had been a war on Earth, or the Starflight Fund had been dissolved, or... There were nearly as many gloomy ideas circulating as there were theories about the fate of the Draconians.

The sky was as harsh as steel overhead. The air was full of inescapable dust borne on a breeze which never blessed this plateau with anything more refreshing than a tingle of salty mist from the waves that constantly broke on the rocky south-east coast. In the glare and heat and dryness the thirty humans on the planet fretted and argued and complained over and over about the news they were expecting from

home, the indispensable new equipment they weren't going to receive, and countless other disappointments.

This is making me understand the classic summary of paranoia: "the universe is a gun and they're pointing it at me!"

So many hopes had blown away on the salty wind, or evaporated towards the cruel sky. Two years ago, when she had been the youngest person ever to arrive at Sigma Draconis, she had been looking forward to the experience.

In spite of my fears about Dugal, I was excited. I . . .

She drove herself to be totally honest.

I didn't doubt my dreams. I was sure we'd solve the riddle, and convinced I would make the key contribution. And I knew Dugal was as proud of me as I was of myself. Past tense. Living two full years in the shadow of this monumental fall from greatness. . . It's not good for human beings to face the truth that a whole intelligent species can be mortal.

THERE WAS NOTHING superficially basic about this base; it had been designed by ingenious, thoughtful people, and though it was built of the simplest possible materials—metal plates, glass melted from local sand, and plastic processed out of a local crude oil, similar to bitumen—it was comfortable, practical, even attractive. And this, the communica-

cations and computer hall, was large enough for the thirty of them not to feel crowded together. It was not physical deprivation that was making for so many downcast looks.

How must Valentine Rorschach be feeling, who had come with the first full-manned expedition, had spent six years as the Director, and was now compelled to depart with the mystery unsolved because of an arbitrary fiat from distant Earth? Was he wishing in his heart of hearts that the ship might not in fact arrive, so that he would not have to return with the knowledge of his failure?

And what about Lucas Wong, who had arrived in the second party, who notoriously did not want to inherit the directorship in addition to his departmental responsibilities as head of Biomedical Section, yet had been instructed to agree because a computer evaluation showed he was the most suitable of the senior personnel?

What about fragile, wrinkled Toko Nabura, keeping her watch at the communications console there at the far end of the hall, who had made their satellite links, and their data-storage and data-retrieval systems, into such a model of flawless reliability? How did she feel about being sent home, leaving her creation to a stranger? There was no way to judge her secret feelings, though. More than once in the past few

days people had snapped at her, as though suspecting her of hiding the *Stellaris* in the crannies of hyperspace, and she had always replied in her normal soft tones, seemingly unaffected.

Yet was her fine-lipped mouth not turned down a fraction at the corners, were her eyes not a hint more narrowed than they used to be...?

It looked, indeed, as though only one out of them all had kept his cool, and that, as might have been predicted, was the chief archeologist Igor Andrevski, a lean man in his fifties much given to gesticulation, whose eyes were always bright under his shock of grey hair and whose mouth seemed always to be busy with words, or laughter, or at worst a grimace of sympathy for another person's troubles.

He was certainly the best-liked member of the staff. In a sense he was an atavism; he should have been born in the great days when Schliemann at Troy, Woolley at Knossos, were converting legend into documented fact, rather than in an age when archeology had been distilled into a pattern of formal processes. He had been the ideal choice to head their most important department, even though political wrangling had delayed his appointment until 2024.

What would we do without Igor? Thank goodness he's not due to be rotated home! I wonder why they didn't pick him to be the new Director instead of Lucas. . . Oh, I suppose sorting out our occasional rows and emotional crises would drag him away too often from what is after all the most important work we're here to do.

She realised with surprise that thinking about Igor had made her smile a little. That guided her all the way to a private admission which only the strain of being isolated here (*of being afraid!* glossed her subconscious brutally) could have provoked.

Suppose they bring the news that Dugal has. . . died. Or even if he hasn't! I would like, really, to have some other man in my life. A woman should have someone else besides an invalid brother, no matter how kind, how clever, how beloved. And out of all the men I've met, here or at home, despite his being twice my age, I'd like it to be Igor.

Only somewhere a long time ago in Igor's life there had been a tragedy. He never referred to it, but it was known that it had involved a wife he adored, and a baby, and...

Anyhow, they weren't there any longer, and his most profound passions, his most forceful drives, were sublimated into that uniquely rational form of quest for a vanished unrecoverable past: archeology.

Perhaps if I too were to lose the person dearest to me, a bond might-

But before she had time to feel shocked at the idea welling from the depths of her mind, there was a cry from Toko.

"There she is!"

Everyone in the hall stopped in mid-word and spun to look her way. Above the communications panel, a screen where a blip had appeared, blue-white on white-green. A second elapsed, and then the hall was echoing to whoops of joy and the noise of stamping feet. The racket drowned out Toko's exchange with the ship, and it was—or felt like—a long while before anybody noticed she was not smiling in relief.

A hush fell again. Brushing back hair that was no longer there, Director Rorschach said, "Toko, is something wrong?"

"I don't know. I can't get them to talk to me. All I heard was a curt acknowledgment of contact. I think it was the young man who made his first trip last time, Somogyi. And after that, nothing. *Stellaris! Draconis Base calling! Why are you so late this trip?*"

Silence. Somebody said, "You don't suppose...?" And let the words hang in the air like smoke. All of them knew about the things that could theoretically go wrong as a ship emerged from qua-space, up to and including re-entry into the normal universe as a wave of neutrinos instead of solid matter.

Toko gestured at the screen where the blip still loomed reassuringly bright, while with her other hand tapping down switch after switch on the board before

her. "Nothing wrong with her automatics or power-systems! There's Navigation Satellite One locking on her beam, there's Two, there's Seven just picking her up as she rounds the shoulder of the planet... All normal so far as the machinery's concerned, and what's more they seem to be tracking into a first-time landing orbit—"

She was interrupted. A voice they recognised, that of Weil, boomed from the speaker rigged to receive incoming messages from the ship.

"Do not record! Wipe any automatic recording of this message! Wipe any record of the wiping! This is Rudolf Weil. We've been compelled to waste space this trip on bringing with us a military intelligence expert who's convinced you're adapting alien weaponry to conquer Earth. He's empowered to close the base and take you home if he's the slightest bit suspicious. This is my only chance to warn you, and at that I'm taking a hell of a risk. The ship is crawling with his bugs, as the base will be immediately we land. But right now he's strapped down in his cabin for the approach and our gravity-compensators are oscillating which ought to blur most of his instruments, so I've gambled on transmitting this one-time self-destruct recording. Do not on any account mention it to him, and keep your fingers crossed! Ends!"

GOING IN OR OUT of a planetary gravitation well, the compensators often wandered as they struggled to maintain a steady 1g pull . . . or, to be precise in the case of a trip to Sigma Draconis, the 1.08 which they had slowly built up to in order to prepare the passengers for landing on the larger planet. Leaving Earth the effect had been quite mild, but during the approach they had oscillated with a vengeance. By the time the creaking of the hull announced touchdown Ian was feeling very giddy.

For a while he lay in his bunk with his harness secured, listening as the faint hum of the power-systems faded, and then all of a sudden found he was sniffing.

The air was growing warmer, and drier, and there was an odour in it which he didn't recognise. A word burst into his mind like a magnesium flare:

Alien!

Instantly he was clawing at his harness-release. Why the hell was he lying here like a dummy when outside was the whole new planet he had come here to explore?

Not pausing to pick up any of his belongings, he raced along the spinal corridor towards the main exit lock.

And stopped dead the moment he came in sight of it.

Everybody else, including the

colonel, waited with impatient scowls in the lock's ante-section. The light of the new sun, reflected from a matt white bulkhead, showed that they were all staring towards the exit but making no move in that direction.

Visions of disaster filled Ian's mind. Nearest to him of the other passengers was Karen; he hurled a frantic question at her.

"The general," she explained in a soft but caustic tone, "is ensuring his immediate unpopularity. He has a bullhorn and a case full of spy-eyes. Take a look."

She moved aside. Rising on tiptoe and craning, Ian was just able to glimpse Odoñez-Vico, framed in the lock aperture against blinding blue sky, tossing into the air literally by handfuls scores of light, off-white discs that soared away like the mythical "flying saucers" of last century.

Beyond the lock the glare was too intense for Ian to make out more than the predictable fact that the base staff had come crowding into the open, but he couldn't see their features.

Abruptly a deep voice boomed, "Who the hell are you, and what do you think you're doing?"

His first task complete, Odoñez-Vico slammed his case shut and raised his bullhorn, which he wore on a baldric. In a crisp bark he identified himself and described his mission.

There was a stunned silence.

Then there followed a roar of laughter, at first nervous, then mocking, and a clear high girl's voice shouted, "Oh, wait till you've been here a couple of days! Then you'll know the only secrets on this planet are the aliens!"

A rattle of applause greeted the remark.

But it served mainly to make the general boil over. He raised his bullhorn again and bellowed, "You'll regret that, young woman—I promise you! Over there I see the retiring director Dr. Rorschach—come here, please. And also Dr Toko Nabura; is that you? I propose to start my investigation immediately. Take me on a complete guided tour of this base. I shall also require unhindered access to your computerised data-stores. As for the rest of you!"

His voice rose sharply.

"You will remain here until I return, in plain sight! If one of you so much as walks around to the far side of the ship that will be sufficient reason for me to close the base and order your immediate embarkation, bringing nothing with you, not even clothes!"

"He's out of his mind," Ian whispered.

"Have you only just realised?" Karen murmured dryly.

"Ah... General," said the same deep voice as before, which Ian now recognised from recordings—it sounded different uttering an angry shout from

what he had heard in normal conversational tones.

"Yes, Director, what is it?"

"We may at least move into the shadow of the ship?"

"Ah... Very well, but remember my spy-eyes are keeping constant watch."

"And may we speak to our new colleagues?"

Ordoñez-Vico hesitated. Rorschach went on, "We're expecting news of our homes and families, you know, and of everything that's been happening on Earth. And the ship's visit has been somewhat delayed..."

How are these people going to enjoy what they hear? The thought flashed across Ian's mind. The Kenya-Uganda war, the Indonesian famine, the Argentine plague, that terrible tsunami with the two-thousand-mile fetch which devastated so much of South Japan, and everything else that's created such havoc recently... Hard to imagine all that in two short years!

"Very well," Ordoñez-Vico said curtly. "You may talk together. But do so in plain sight of my spy-eyes at all times."

He marched pompously down the ship's external ramp and vanished from Ian's view.

"I'll be damned," Karen said, exhaling gustily. "If ever a man combined maximum gall with minimum common sense... Oh, well; let's get outside and see what this place really looks like."

THE CREW STOOD ASIDE to let the

passengers go out first, led by Achmed Hossein who was due to replace Toko Nabura. Ian was last in line... and the moment he stepped out, the light hit him like a hammer. In his haste to leave his cabin he had omitted to bring dark glasses. But the last thing he wanted was to turn around and fetch them; even so trivial an act might make Ordoñez-Vico suspicious. He shaded his eyes with his hands, and shortly his vision adjusted enough to give him his first clear sight of mankind's precarious stellar bridgehead.

The base rested on the layer of ribbed, roughened glass into which a half-mile circle of the plateau had been fused prior to the original landing. Wind-borne sand-grains had scratched and eroded it, but it was still hurtfully bright in full sunshine.

The buildings were low, and clustered together. A sort of pseudopod extended from them to and past the edge of the glass circle. That was, so to speak, the base's umbilical cord. It included a water-pipe connected to a well sunk into a layer of what corresponded to chalk, where millions of litres of pure sweet rainwater had been trapped in an age when the climate hereabouts was different, and a conveyor to bring in native vegetation from the north coast, the only region where it was dense on the island. That was to supply the food-converters, housed over there in

a shed adjacent to the refectory and recreation complex and powered by solar mirrors on its roof. They processed the raw material into a remarkable variety of humanly-edible dishes, not to mention excellent wine and beer, thanks to the care with which their master tapes had been programmed.

It had always seemed ironical to Ian that when Yakov Berendt invented the food-converter he had predicted in high excitement an end to famine. How could anybody go hungry, he demanded, when every tiny village and hamlet possessed a machine capable of turning any sort of plant from trees to algae into a nourishing even a delicious diet?

But people still starved, and not infrequently they did so by the million. Because such a machine large enough to feed even a hundred people cost as much as a light aircraft or a luxury yacht. Therefore the commonest purchasers of food-converters were hotel and restaurant chains in the wealthy, not the impoverished, nations of Earth. The millennium seemed as far away as ever.

PARTWAY ALONG this "umbilical cord" a building stood isolated from the rest, headquarters of the civil engineering section Karen was assigned to take over. Directly below lay a vein of high-quality iron ore, and all around, of course, were vast

amounts of aluminium compounds. Solar furnaces, many built right here, provided plenty of metal for building purposes and simple maintenance of the less complex equipment. Plastics were also made there, from vegetation or the tarry bitumen-equivalent of which a dozen deposits were known on the mainland opposite.

Parked between there and the main portion of the base were five hovercraft: three light long-distance personnel transporters, two heavy-duty models. It was a slow way of getting around, but they floated and by following all possible water-routes fuel-requirements could be cut to a minimum, while they could cross all but the roughest ground. The base's computers had long ago worked out optimum paths to any destination on the planet, using satellite maps.

Ordinarily, apart from one on permanent reserve standby, the hovercraft would not have been here. The personnel spent most of their time far from base, digging for history.

The only people who did usually remain here were the six members of the department which Toko Nabura was now scheduled to cede to the newcomer Achmed Hossein, plus the Director and hitherto the chief medical biologist... because in an emergency he must be available to save life. But that situation would now change, since the two

jobs were due to be combined in the person of Lucas Wong. In any case there had been few medical emergencies; almost no local organisms could infect human tissue, and when an exception did occur the food-converters could produce a tailored antibiotic within a matter of hours... a facility which unfortunately had not become available until the third trip, or it would have saved the lives of the two people who had died here.

Likewise, there were six people in the civil engineering section, but apart from one person on base duty they were usually out at the various digs, supervising the sonic and electronic probes, the high-pressure hoses, and the excavating machines needed to clear away the débris of a thousand centuries.

The biologists spent even less time here, for they were constantly studying the flora and fauna in the hope of garnering clues to the natives' disappearance, and—naturally—the archeologists were here the most seldom of all.

It looked as though they had put the last two years to good effect. All around the base were cartons and crates and cases ready for shipment to Earth. Just so, no doubt, had the artefacts Ian had studied before departure awaited their turn on the loading conveyor.

A tremor of excitement gripped him, mingled with au-

noyance because all that unique material was going to be flown out of his reach.

Six administrative staff, six civil engineers, eight biologists, and ten—well, I guess I should think in terms of "ten of us" now. Total, thirty. Thirty to unriddle the mysteries of an entire planet! It's absurd!

Which was as far as his musings continued before he was distracted by a cry from the girl he had heard speak up before: black-haired, green-eyed, slim, unmistakably Catherine Polyzotis. Catching sight of Weil as he emerged from the shadow of the air-lock in Ian's wake, she shouted, "Rudolf! How's my brother?"

And before Weil had the chance to reply, a man's voice was exclaiming:

"I'll be damned! They actually sent Ian Macauley! Oh, that's wonderful—I never dared hope for such good luck!"

v

A MOMENT LATER Ian found the celebrated Igor Andrevski pumping his hand vigorously and bombarding him with greetings, and one second later still Cathy was pushing past him to confront Weil.

"What about Dugal?" she insisted.

Memory whirred like a turbine: *Oh, yes! She's the one whose*

brother had—was it incurable leukemia?

Anrevski broke off. Into a temporary local silence deep as a well Weil dropped words as heavy as stones.

"Cathy, I'm very sorry. But he was dead before we returned home."

"Oh, how tragic!" Andrevski whispered.

Ian was trying to think of something to say that would be sympathetic without being inane, when the girl simply sat down on the steps and buried her face in her hands.

Weil was about to drop beside her and put his arm around her shoulders when Andrevski checked him with a gesture.

"Leave her, Rudolf. I think I know her a little better than you do. She has been preparing herself for this bad news. Let her be alone to accept it in her own way."

Weil obeyed, although he looked doubtful, and went down to mingle with the others. Andrevski laid one thin hand on Cathy's head for a moment, and then took Ian companionably by the arm.

"Come, let me present you to the rest of your new colleagues. I can't begin to tell you how pleased I am that you are here. After seeing your amazing analysis of the inscriptions from Mohenjo-Daro, and your work on Etruscan funerary motifs, and above all your reports from Zim-

babwe, I said to myself, 'That man absolutely must come to Sigma Draconis!"

Ian suffered himself to be led along. But all the time he was mechanically shaking hands with these strangers who were not strangers, whom he had already been introduced to when they were lightyears distant from him, he was thinking a single repetitive thought:

I never felt so strongly about anybody, not in my whole life, that I would sit down and weep in public at his death. I should be able to feel that deeply. I would like to. And I can't.

Overhead, like vultures, floated the spy-eyes Ordoñez-Vico had turned loose. One, no doubt drawn by some out-of-the-ordinary body-secretion, swooped towards Cathy and hovered right above her.

He wondered if the lure consisted in her tears.

THE WAIT was long and hot. After making his tour of the actual buildings, Ordoñez-Vico insisted on being shown all the alien artefacts which had so carefully been packaged for shipment, and seeing their work undone some of the resident personnel began to grumble aloud, only to be hushed by Weil and his fellow crewmembers, who stressed that what the general had said was all too true; he was perfectly prepared to close the base.

"Maybe we should arrange

to—ah—lose him!" someone muttered.

"Even that wouldn't help," was Weil's sour answer. "If he doesn't come back to give his personal assurance there's no plot being hatched here, that will be the end of starflight for good and all."

Still, if nothing else, this delay afforded Ian to hear the latest news of the excavations, and Andrevski was voluble on the subject. So were his other new co-workers, in particular the improbably-named Olaf Mukerji whose parents had also been archeologists and who had met on a dig in the mountain fastnesses of Afghanistan, and the black American girl Sue Tennant with the short curly hair and the big disorganized teeth who had done excellent work in Mali, and Ruggiero Bono, a little tense man who despite his Italian name was Mexican by citizenship and had made notable contributions to the technique of artefact-dating, having switched to archeology from nuclear physics. And so on.

"Yes, indeed: we've located several more city-sites, and their structure and contents do indicate we were right in our guess about a single focus from which civilisation and culture diffused without interruption over the entire planet, very much unlike our own stop-and-go-and-stop pattern, hm? Maybe they didn't like to waste time! Right now we're sinking our best efforts into the one we've code-named Peat."

"Why Pete?"

"What? Oh! P-E-A-T, because the cover is mostly decayed vegetable matter and relatively easy to shift. I've been there a lot recently, with Cathy who could tell you more than I can, I'm sure. Next most promising is the one we've called Ash, because it's a Pompeii situation; the cover is friable volcanic dust and also easy to shift though unfortunately the degree of preservation is a lot poorer—there were probably earth-tremors. But that's Olaf and Sue's baby, so ask them for the latest. Then there's one which we spotted on a satellite-map and baptised Silt, which we're not really into yet; it's at a river-mouth and seems to have been buried by fine soft mud and then heaved back towards the surface before the stuff compressed in deep water, so we're pushing ahead there as well, mostly with the hoses.

"We've been busy at the earlier sites too, of course—Snowfall One yielded some fascinating stuff, though Snowfall Two had been subject to so much glacial action we decided we'd best leave it to a remote automatic analyser looking for anomalous concentrations of metal and such. And I'm afraid very little came of Seabed either, which we had high hopes of when the ship last called, because the aquatic life here is just as destructive as Earth's and the sea-water if anything more corrosive, so..." A

shrug and a wave.

Ian finally uttered the question which meant most to him: a single word.

"Inscriptions?"

"I should have mentioned them at once, shouldn't I? Yes, there have been two very important developments in that area since the ship last called. First off, Lucas's people established something that has absolutely convinced us this printed-crystal technique was their counterpart of writing. Some of the surviving species can actually imprint suitable rocks with a distorted trace of their own field—leaving a false spoor, as it were, to mislead predators that are hunting them down. And the second thing is that at each of the sites we've opened up in the past two years, we've found what we've nicknamed libraries. Large structures, jam-packed with printed crystals, and a great many of them with good loud patterns resonating in their structure. Plus, naturally, a lot more blanked by random noise."

"How many is a great many?" Ian breathed.

"Oh, about thirty-five thousand. A few per cent."

"What?"

"Damn it, how many books do you find in a human library?"

"I didn't mean that. I meant..." Ian clenched his fists. "Have you made any progress towards deciphering them?"

Andrevski looked lugubrious.

"None whatever. So far as the palaeolinguistic aspect is concerned, we're relying entirely on you. Though naturally we'll give you all the help we can."

TIME HAD PASSED. A lot of time. Shadows had lengthened and the breeze was strengthening with the approach of dusk. Cathy stirred and lowered her hands from her red-rimmed eyes; instantly the dry air erased her last tears.

Poor Dugal. To have lived thirty-two years, with such a sharp mind, such splendid ambitions. . . and then to have it go for nothing. How like the natives of this world!

Stiffly she rose and walked over to the group of her colleagues who were chatting with this new arrival, this man Ian Macauley who, at least according to Igor, had done work in his twenties which deserved comparison with that of Michael Ventris and Champollion. He was gaunt and gawky, and he kept nervously plucking at his untidy red hair, but to judge by the smiles on the others' faces he was making a good impression.

As she drew near, they fell silent and looked at her. No doubt Igor would already have explained why she was sitting alone crying. Well, for the moment that was over. She felt purged of grief for the time being, able to reason and react.

"Dr Macauley?" she said, and offered her hand. "I'm Cathy Polyzotis, as you've probably

realised."

Somewhat awkwardly he shook with her, and said, "I'm—ah—I'm terribly sorry about your brother, Dr Polyzotis."

"Cathy, please. . . Well, I was expecting it, you know. It had to happen sooner or later, and it can only happen once." She hesitated and glanced around. "Is that general going to keep us waiting here all night as well as allday?"

"He went back inside," Igor grunted. "After examining the artefacts we'd packed for dispatch. Probably wants to make sure the computer records don't describe them as ultra-guns or hyper-bombs or whatever the hell."

"It makes me feel," Cathy said with a shudder, "that everybody on Earth must have gone mad."

"Not quite," Ian said. "But they're getting close."

She blinked at him, and the rest of the little group were jolted too.

"You sound as though you mean that!" Olaf said.

"I think I do. Simply knowing that another civilisation vanished, knowing above all that the explanation may be in the records they left behind which we can't read. . . It's preying on the mind of the human race."

"They want to be distracted at all costs," Igor suggested. "Anything so as to stop thinking about the idea."

"Yes, I'm afraid that's the size

of it. The mood we left behind was... Well, I can only call it ugly."

INTO A DEPRESSED PAUSE there broke a booming shout from Ordoñez-Vico's bullhorn. With Toko and Rorschach following, he had emerged from the nearest building, the one housing the computers and communications gear.

"Attention, all of you! You may disperse to your quarters now. Bear in mind that my spy-eyes are monitoring literally every word and action! Assemble again in the refectory for a meal in thirty minutes. After you have eaten I propose to question you collectively, employing an advanced lie-detector, and over the days to come I shall interrogate you individually, too. That is all!"

He spun on his heel and marched back indoors.

"He sounds like a prison-camp commandant!" Cathy said in horror.

Ian answered in a low tone, "Yes, he comes of the same stock. An atavism. But I'm afraid he's more typical of mankind than you or I."

VI

IT WOULD HAVE BEEN hard to tell, simply by looking, that this base was in fact basic. Never before in human history had so much

sheer ingenuity been focused on so tiny a spot.

When Ian reached the quarters assigned to him, pushing his belongings on a little trolley, he discovered they were amazingly spacious; he had expected far more primitive conditions—if not quite like those he was used to at archeological digs on Earth, then at any rate something cramped, like his cabin aboard *Stellaris*.

On the contrary; the bedroom was large, he had his own bathroom, there was a sonic cleanser ready to accept his soiled clothing, the walls were brightly painted and there were cheerful curtains at the window which matched the coverlet of the bed.

But, of course, they were locally spun from the same material used for flooring, and packaging delicate alien artefacts, and the table and the two chairs—one upright, one easy—were made of the same stuff, and the floor and the walls and the door and the ceiling and the bath-tub and the shelves were all variants of the same simple metal plate sandwich with a foamed internal layer which was the best the foundry and machine-shop here could offer, anodised with several colours.

The changes were, nonetheless, very ingeniously rung. He was impressed—as impressed as he had been when, thinking in despair that his mass-allotment of twenty kilos would mean leav-

ing behind half the reference books and computer programmes he wanted to bring with him, he had discovered just how many data could be crammed into a single cassette of acceleratape when expense was virtually no object.

He had wound up scratching his head and trying to decide what else he ought to take along.

AND HE WAS positively shaken when he saw the variety of food offered in the cafeteria-styled refectory, which included every classic dish from every cuisine on Earth, plus a choice of more than fifty drinks to wash it down.

And to think my briefing covered that in a single sentence—something like, "The machines provide a diet both nutritionally adequate and exceptionally varied."

He was frankly goggling at the array of selection-knobs when Karen Vlady tapped his arm and murmured, "Ian dear, in the next two years you'll have a chance to try them all!"

A valid point, in the light of which it didn't seem to matter that this first time he wound up, somehow, with bird's-nest soup, *souvlakia*, mealie porridge with okra sauce, and peaches Melba. It all tasted most convincing.

THE REFECTIONY doubled as a lounge and conference hall. Around its walls were plastic couches, foamed, formed and furred in a single operation, light

enough to be carried by one person if it was desired to re-arrange the room. In the centre of the floor were stackable chairs and a dozen tables, each capable of seating four people.

Ordoñez-Vico had arrived early and created for himself a sort of place of honour, with Rorschach, Wong and Weil as his companions. He ate little, but kept sweeping the room with a defiant, challenging glare.

Ian accepted an invitation to sit with Cathy and Andrevski, with Olaf, Sue, Ruggiero and Irene Bakongu—who seemed to be an old and close friend of Ruggiero's—at the next table. Even though Andrevski kept urging him to take another and yet another glass of a delicious white wine, based on a tape delivered by the second expedition which had retained extraordinarily fine detail despite countless replayings, Ian found the meal a terrible ordeal. Ordoñez-Vico's spy-eyes had found their way indoors, inevitably, and one of them clung to the ceiling directly above their table like a patch of mould.

Moreover the knowledge weighed on him: *This is all of us, and very nearly all we have!*

Comparing this base to the planet as a whole was like comparing one human life-span to the period since the disappearance of the natives.

HE WAS NOT ALONE in lacking ap-

petite. Much food was left on many plates...not that it mattered, for it would all be recycled through the processors. When the tension had reached near breaking-point, Ordoñez-Vico finally rose, cleared his throat, and produced his lie-detector.

"Your attention, please! First I propose to make some calibrations. I shall put some questions, and pick on one of you at random to supply the answer."

He left his seat and followed a weaving path through the hall which took him past every table. His glance darted from face to face, then to his lie-detector, then back again. It was noticeable that his eyes paused a fraction longer when he looked at the women, as though he resented their presence.

And it was a woman he called on to answer his first question: Toko Nabura.

"These aliens—how long ago did they die out?"

"About a hundred thousand years, plus or minus four thousand."

"Why aren't you more precise about the date? You!" And a woman again: Sue Tennant.

Wearily she replied, "This is a world with vigorous tectonics and rapid changes of climate. It's hard to calibrate the strata."

"Yet you assert that their earliest traces are only some three thousand years prior to their last. How do you explain that?" He was pointing at a woman

again, and this time at Cathy.

She had spent the meal in a brown study of depression, eating little, speaking only when addressed. Now, though, she contrived to rouse herself and find an answer.

"Oh... Oh, everything points to it."

"I want details!" Ordoñez-Vico strode over to her. "Don't think you can get away with vague doubletalk!"

"General!"—sharply, from Andrevski. "Cathy was told, only a few hours ago, that her brother died after she left Earth."

"I know all about that, and I still want a proper answer!"

All around the hall chairs scraped as people pushed them back resignedly. This was going to be long and unpleasant, that was plain.

But by now Cathy had all her wits about her, and was looking Ordoñez-Vico straight in the eye. She said, "With respect, general, I'm not sure you'd understand if I said that the phi-diffusion factor in the modified orthorhodoclo-sites, the pyruvitic gangliar formations, and the Type G-9 artefacts which are the main items in respect of which we've so far established a definite temporal progression, because they are found at all the sites we've investigated rather than at one or two...when taken in conjunction with contemporary C-14 uptake in surviving near-relatives of the natives, and the known decay-

rate of epidermal pseudo-chitin as established by testing it in various simulable media that correspond to actual conditions at the various city-sites... and sundry other factors, naturally... all these things are what we base our estimates upon, and they happen to coincide within a very narrow band of the past: three thousand years. But equally I am sure"—this with a sunny smile—"that you as an expert in your field will take an expert's word in a field you're not conversant with. Won't you?"

From the far side of the hall there was a noise as though somebody was trying to stifle a laugh, without much success. Ordoñez-Vico whirled, as though suspecting mockery, but all he saw was Achmed Hossein holding a napkin to his mouth and a great many polite smiles at surrounding tables.

As for Ian, he wanted to clap his hands. But all he dared do was give Cathy a wink, which she acknowledged with a mow before reaching for the wine-bottle.

Breathing heavily, Ordoñez-Vico rounded on Rorschach.

"You've been here six years—why haven't you come up with any solid facts?"

Rorschach, as usual, brushed at his bald forehead as though still expecting to find on it the hair he had lost since his arrival.

"But we have. A great many. As a result of slow, thorough re-

search, particularly by comparing the scanty remains of the intelligent species themselves—I mean their fragmentary corpses—with their nearest surviving relatives. Of which there are about four hundred and fifty, aren't there, Lucas? I'm talking about species, obviously."

"Nearly five hundred when you take genetic resemblances into account," Lucas Wong said with a sigh.

"So what are these solid facts?" Ordoñez-Vico barked. "I didn't notice them when I was going through your reports on Earth!"

Rorschach allowed that point to sink into the minds of everybody else present by hesitating just sufficiently long before he answered.

"This is almost cruel!" Cathy breathed.

"He deserves it," Ian muttered.

"Well, for example," Rorschach said, looking up at the ceiling, "we know they were very much like us in some respects. We know they were interested in the universe around them. We suspect they traded among each other. We're almost certain they had the equivalent of writing, and beyond doubt they had transportation, communication, science, mathematics... But we also know that in some ways they were very different from mankind. Above all, their culture must have been as influenced as all human cultures have always been by sex."

He paused, having judged—rightly, as was clear—that he had used a word which in the general's vocabulary was of limited significance, and pejorative into the bargain.

"What do you mean?"

"I think you'd better ask Lucas, rather than me," Rorschach suggested.

"I will decide who is to answer which question. In this case... You!"

He pointed at Nadine Shah, a handsome woman (a woman again, as though he really believed he could catch one in a lie more easily than he could a man) in her late forties, who was Lucas's chief assistant and the leading authority present on comparative biology.

In a clear voice she replied, "Unless they were improbably different from their surviving cousins, they were bisexual as we are, but both sexes coexisted in the same individual. Infancy was a neuter stage; there followed a male stage; and after that there was a comparatively short female stage prior to the infertility of old age."

That, for the moment, silenced Ordoñez-Vico, and gave Rudolf Weil the chance to say, "That's new, isn't it?"

Nadine nodded. "Yes, when you last called we were still under the misapprehension that we were dealing with no more than an extreme degree of sexual differentiation. Now we've actu-

ally tracked several individuals through the transition stage. It lasts about a year, after which what was a functional male is uncontestedly a functional female. There are terrestrial parallels, of course, such as oysters."

"Kindly do not talk among yourselves!" Ordoñez-Vico snapped. "Simply answer my questions!"

Obediently the company fell silent again.

"Explain more about the differences between them and us. You!" Pointing now at Ruggiero Bono.

"They thought differently from the way we do, and that's the long and short of it," sighed the little dark man. "They approached problems similar to ours by a different route. Up there on the moon they equipped their telescope with—with something organic, where we'd have used solid-state electronics. We dug that flying-machine out from under a pile of snow, and from that and everything else that's reasonably intact we've deduced that they could store enormous amounts of energy in ways we'd regard as fit only for a kid's toy: like twisting rubber bands! They used springs and filaments, except somehow they managed to pack the energy right away on the molecular level. Oh, they did things we can barely guess at!"

"So what happened to them?" Ordoñez-Vico rapped, and pointed at Andrevski for the

answer.

Perfectly calm and collected, the chief archeologist wiped a trace of wine from his upper lip and planted both elbows on the table with a thoughtful expression. "Well, a great many possibilities remain open," he said judiciously. "I'll list them with their various pros and cons, keeping track as best I can. There's the possibility that they may have emigrated, to begin with."

"What?"

"Well, as I said, many possibilities remain open! Myself, I don't think that's to be seriously considered. More to the point, perhaps, is the idea of epidemic disease. We know they had rapid transportation, so it's conceivable that they may have spread some fatal virus so swiftly around the planet they had no chance to develop immunity against it. On the other hand, the bioelectronics on the moon, which have just been mentioned, argue that they must have been very skilled in organic chemistry. It's reasonable to assume that their medicine too would have been very advanced.

"Did they exterminate themselves in a war? Well, we've found no traces to suggest that any of their cities were laid waste by other than the natural forces: weathering, earthquakes, and suchlike. But it's not impossible, even though we've ruled out explosives, nuclear or otherwise, and massive doses of any substance

we know to be poisonous to the contemporary fauna. And radiation weapons, too. It's been suggested that some disease may have been deliberately sown broadcast—in other words, they may have fought a biological war—but there's an excellent reason for discarding that idea, too."

"What?"

"How could they have crammed such a vast range of achievement into so short a time if they'd wasted any of their ingenuity on quarrelling among themselves? We've surveyed this planet from space over, and over, and over; we've probed the surface with sonar, electronic detectors, all our most reliable techniques. We've found a coherent cross-section of relics. In three thousand years they went from—oh—what we'd call the Neolithic stage, smelting copper and baking pottery vessels, to spaceflight. It took us more than twice as long."

"How do you know these conditions didn't exist simultaneously?" Ordoñez-Vico broke in. "They do on Earth!"

"A very acute question," Andrevski acknowledged. "Let me make my point a little clearer. We have found a central focus from which their culture appears to have disseminated—the sole place at which the full range of artefacts has been discovered. As one progresses along a line of expansion, or more exactly a cone of

expansion, because it broadens as it grows longer, the lower level disappears. At the far side of the planet from this focus I mentioned, there seem to be no primitive vessels, no copper implements, no artefacts that can be dated to the earlier, rather than the later, stage of their development. It's as though, to take an Earthly analogy, the civilisation which arose in the Fertile Crescent had expanded without interruption westwards, engulfed Europe, crossed to North America, then spread to the far side of the Pacific, expanded over the whole of Asia and India, and returned to its still-intact point of origin... where, naturally, things would by then have been very much changed. This is another thing to bear in mind when considering the possibility of them being wiped out in a war: this single continuous expansion, as though they never met any opposition. Without opposition, what cause for war? But—"Andrevska raised an admonitory finger. "This brings in a related subject, one which I presume to have been at the forefront of the minds of those who sent you. Were they wiped out by an attack from space?"

Someone gave vent to a nervous titter. Ordoñez-Vico quelled it with a glare like a flamethrower.

"Go on!"

Andrevska studied his hands with intent concentration.

"This hypothesis assumes the existence of yet another species, so jealous of its privileges that it scours the galaxy in search of possible competitors, and upon discovering them attacks without mercy. Am I correct in guessing that this is what's worrying people at home?"

Ordoñez-Vico hesitated; then he said with an air of defiance, "Yes!"

"I see. As a matter of fact, I carried out quite an exhaustive computer analysis of this idea when it first occurred to me. It led to a pair of extremely interesting conclusions: on the one hand, any such species with the technology to attain space-travel would stand between an eighty-nine and a ninety-nine per cent chance of fighting a disastrous final war before reaching another star, and on the other, assuming it did discover hyperflight, it would have technology adequate to sterilise whole planets, not simply to hunt down members of one particular race. In sum, general, if that were why the natives disappeared, the odds are several thousand to one in favour of this planet having become a belt of asteroids... which I think you'll concede it has not?"

Moment by moment Ordoñez-Vico's cheeks were growing redder, as though he suspected he was being mocked but could not put his finger on precisely how.

"Then what other explana-

tions can you offer?" he snapped.

"Oh, several!" Andrevski said, and in parenthesis to Cathy: "More wine, please; this is making me thirsty... Yes, several, as I was saying. I believe we can rule out predators straight away, because there are no large predators on the planet at present, and without being kept in check by the intelligent race one would expect them to have multiplied if they existed. That is, unless their diet consisted exclusively of their intelligent cousins, and having eaten the last of their prey they starved to death—not, I submit, particularly likely, hm? Parasites of course are another matter; it's been correctly remarked that human body-lice would not survive mankind, but again none of the surviving species is disastrously infected with parasites capable of killing them wholesale.

"Did their religion call for them to sacrifice one another, and ultimately reach such a pitch of fanaticism that groups and factions competed to see who could slay the most hecatombs on the most frequent feast-days? It's not without its Earthly parallels, that notion. One might cite the downfall of the Inca culture, the wars of religious intolerance, the Inquisition, the *autos-da-fé* where dissenters were publicly burned alive... Oh, I'm sorry. I should have asked whether you're religious."

"Yes!"

"I am not, myself, but I don't wish to give offence. Let me leave that aside, then—because in any event it's most unlikely. All our evidence points to a planned, rational, successful expansion from a single centre, as I explained, so that kind of lunatic brutality would only enter the picture if we strained our definition of 'religion' to include an ideology like Nazism... the most colourable of this particular range of suggestions in my view, by the way. A single-minded dictator, perhaps born of an exceptionally intelligent species—that could be the explanation we're looking for."

"Appearing out of nowhere?"

"Ah, that's what's most ingenious about this favourite hypothesis of mine," Andrevski said, beaming. "Let's suppose that two events fell very close in the history of this world: first, some solar disturbance irradiated the planet and provoked a higher-than-normal incidence of mutation, including one which generated intelligence. Remarkable intelligence! Constant expansion followed for three thousand years, until the small original nucleus of intelligent creatures had explored the whole planet—or rather, their descendants had—and visited the moon. And then came a fatal setback: the planet's magnetic field underwent a periodic reversal, like those we know about on Earth. They perceived their surroundings in terms of elec-

tromagnetic fields, they most likely communicated in the same mode; their entire world-picture was dependent on such effects. Suddenly...they went insane. Because they had all, simultaneously, lost touch with reality. How does that appeal to you, general?"

Andrevski sat back with a smug expression, while Ordoñez-Vico was visibly floundering in the welter of his words.

"A great theory," Rudolf Weil said dryly. "Except that it doesn't hang together. There wasn't any such solar flare-up; it would have left traces on the rocks of the moon, and we eliminated that idea on the first trip."

"And the last two magnetic-field reversals here were forty thousand years too early, and thirty-eight thousand years too late, respectively," Ruggiero added. "Oh, Igor!"

Not a whit abashed, Andrevski said, "I know, I know! But it would be such an elegant explanation if it were true, wouldn't it?"

It was beginning to dawn on the general that he had been led a very long way up a very twisted garden path. One instant before he erupted Rorschach said hastily, "What it comes to really, general, is that we've been driven back on the supposition that the natives' downfall was due to some flaw in their constitution, but that it must have been one which affected them differently

from us. Maybe their sudden rise to planetary domination was due to a—well, a form of drug. Perhaps some local food-plant mutated into a form which stimulated their intelligence, but had long-term effects on their metabolism, or their breeding capacity. Or perhaps it was killed off by a blight. I grant you that's improbable for the same reason that an epidemic is improbable, but we're groping around in the dark, we really are!"

During this speech the general had been recovering his self-control by consulting his lie-detector and taking a great many deep and rapid breaths.

He said now, "My impression is that you do not believe I mean what I say. Well, I do not believe you, either! This device of mine"—he held it up—"has not revealed any direct falsehoods...but Dr Andrevski has attempted to confuse me with what he promptly confessed to be an indirect falsehood! By that I mean a web of words designed to lead his listeners astray. Be warned! It is not my responsibility to prove that you are lying. It is your responsibility to prove beyond any shadow of doubt that you are telling the truth, the whole truth, and nothing but the truth! Starting tomorrow, early, I shall interrogate each of you in turn, in depth and in detail. And if anybody tries to deceive me, you know what will happen. Now, if somebody will guide me

back to my quarters...?"

WHEN THE GENERAL had gone Cathy said, her face very pale, "A man like that was chosen by the UN to be their representative, to sift through our data and pester us with questions... No, I simply don't believe it!"

"I suspect Ian could tell you how horribly true it is," Andrevski muttered.

"Yes indeed," Ian said. "But don't forget—his spy-eyes are monitoring everything we say, and he may conceivably have the patience to play through every tape from every last one of them. I think we'd better go quietly and quickly to our beds."

VII

THANKS TO Ordoñez-Vico the normal work of the ship's thirty-day stopover was going ahead far more slowly than usual; still, it was going ahead after a fashion. Ten days after the landing Weil was busy supervising the loading of the first Earth-bound packages into the hold made empty by delivery of the new equipment which was now being distributed to the various departments, chiefly more refined remote analysis gear. There had been a major breakthrough in that field—ironically, as a by-product of counter-terrorist measures. Most of the new devices had first been used

to spot mail-bombs and concealed weapons at frontier posts and airports.

Thanks to the general's meddling, most of the packages had had to be re-made after he opened them for inspection.

"Morning, Rudolf," a voice said from behind him, and he turned to find Rorschach approaching.

"Morning, Valentine," Weil answered. "How are things going?"

"Oh... Not too badly, considering. Everybody has behaved extremely well. By this time I wouldn't have been surprised if someone had punched Ordoñez-Vico in the jaw."

"Nor would I," Weil agreed. "I've sometimes been tempted..." He mopped his face, sighing. "When I think of all the things I wanted to see on this visit, I get furious. This isn't in the least how I expected to use up my last few days here. And I bet it isn't how you expected to use yours."

Rorschach hesitated. "Well—ah... They aren't going to be my last few days, after all."

"What?"

"The fact that you have to take Ordoñez-Vico back with you means only nine personnel can be rotated. So I'll drop off the list. Lucas never wanted to become Director, you know, and I don't think he deserves to have the job forced on him. My health is good, I have no special ties on Earth, and I think I'm reasonably well

liked by the staff. So I'll stay."

Weil gave a whistle. "What does the general think about that idea?"

"He doesn't know yet. But I have plenty of good reasons to offer him—not that one can be sure he's susceptible to reason, hm? Ah... There's one thing that's been troubling me, you know."

"Only one?" Weil uttered a sour chuckle. "That being . . .?"

"Is there a real risk of us being stranded? I mean, even if we persuade the general those rumours about alien weapons are groundless, is there a chance that the Fund may be abolished anyway?"

"Yes, I'm afraid there is."

"I thought you'd say that." Eyes concealed behind dark glasses because the glare out here was as ever fierce, Rorschach looked towards the western horizon. "Would they give us at least some kind of link with home? Perhaps a cheap automatic quospace missile that would shuttle back and forth carrying news and data?"

"The suggestion has been made, but it was turned down."

"What?"

"It was blocked by the same sort of paranoid suspicion that sent Ordoñez-Vico here. A joint Russo-American-Japanese consortium published plans for just such a robot ship, quite cheap, very reliable, capable of being put into service in little more

than a year. Do I have to explain what became of the proposal?"

Rorschach said bitterly, "Another plot by the rich to keep secrets from the poor. The builders would have first crack at our alien science."

"Cynical! But all too accurate. Nonetheless you can rest assured that when I get home I'm going to devote the remainder of my active life to fighting that sort of short-sighted idiocy. If I have anything to do with it, the base here won't be cut off. After all, the data we're taking back include a good many exciting new discoveries, and perhaps... No, it's probably too much to hope for."

"So I gather from talking to our new recruits," Rorschach sighed, turning to look at the base buildings again. "They all paint a very dismal picture. Crisis on crisis, famine, epidemics, all these petty wars about nothing much, and here and there signs of a major war. Correct?"

"Yes."

"I sometimes wonder, you know, whether there's an inevitable limit to the achievements of intelligent beings. The natives here—now mankind, not for the first time on the brink of suicide... It reminds me of the old joke question: is there intelligent life on Earth? And we're the first people in a position to wonder about it seriously."

With all too obvious an air of changing the subject, Weil said,

"Speaking of the new recruits, how do they impress you?"

"Oh, I think we'll get on well together. I'm sure Achmed will handle the communications and computer side most competently, and Karen Vlad is extremely likeable as well as being admirably qualified, and—oh, the lot of them strike me as ideal for our kind of existence. Bar one, to be candid, and I'd like your opinion about him."

"Not by any chance Ian Macauley?"

"That's right."

"Yes, he's something of an oddity, isn't he? Tense, and remote, and seeming to live somewhere different from the rest of us. But Igor was delighted to get him, wasn't he?"

"Oh, yes, and at present he appears to be settling in well and making a good impression on his colleagues. I can't say why it is I'm concerned about him; I just know I am. What do you think?"

"I'd back him to crack the native language."

"You honestly believe he's that good?"

"He has a great deal of determination. I could tell, the moment I met him, he'd had to fight a hell of a battle against himself before agreeing to be sent here. He hated the prospect of being shut up with a dozen near-strangers in the ship, but he overcame that too and made himself popular during the voyage. Yes, I think he has it in him to batter away until he makes a

breakthrough. But he'll probably go about it some very personal and unexpected way."

Rorschach glanced at his watch. "I hope," he muttered, "that he doesn't do anything personal and unexpected today. The general is spending the morning in the relic-shed with him, Cathy and Igor, being told about the printed crystals they brought in from the peat-site. It's the most explosive situation yet Ian's unpredictable, as you just said; Igor made it clear the first evening that he thinks the general is a blockhead, and Cathy... Well, she seems to have recovered well from the shock of hearing about her brother, but she's a deep person, and hides her feelings much too often."

He brightened slightly. "Well, at any rate if we get through today intact, things should be easier from tomorrow on. The next thing Ordoñez-Vico wants is a sight of our working methods, so he's going to let us get back on the job. Having something to do will bleed off a lot of our accumulated tension."

I WISH that bloody man would get off our necks! I want to start work on these printed crystals he doesn't give a hoot for. Back on Earth I had how many through my hands—eighteen, nineteen? And most of their patterns scrambled. But here there are hundreds, and at the digs there are thousands, and I'm itching, absolutely itching to get at them!

Restless, Ian paced up and down the aisles between the bare metal storage-racks of the relic-shed—not the original, which had been made of steel plates, but a hastily-erected substitute of plastic and aluminium, with minimal magnetic sensitivity.

All around him were thousands of relics brought in from various digs, those in the best state of preservation or found in what appeared to be significant conjunction with one another. But every last one was horribly enigmatic. A sort of pear-shaped thing here, with a hook on the narrow end, about a metre and a half long... and next a cluster of five corroded bars, like the frame of a child's swing... and next a sort of plate, a concave shallow disc with four large and four small protuberances spaced equidistantly around its circumference... and there other and always other artefacts, purpose unknown and unguessed.

But I've got to make guesses, and start making them right away!

He glanced around. There was some kind of low-key argument going on at the far end of the shed, where in an open space a big bench held an array of scientific equipment—radio-daters, neutron-bombardment analysers, various chemical analysers, and a computer remote with a metre-wide screen and the controls which linked it to the base's main computers. It sounded as though it might continue for

some while.

Almost guiltily he picked up the five corroded bars and examined them. They were large and heavy, and one of them was half a metre shorter than the rest.

Now if I were a crab-shaped six-limbed creature with electromagnetic perceptions, what the hell would I use that for? I-Hmm! Interesting! I think it was meant to stand upright, and if it were just a little more spread out... Where's that disc? How big is it?

He leaned the clustered bars against a strut and picked the disc up. It also was very heavy, but if it were laid on the ground... and if that hook-tipped what's-it were...

Hmm! He rubbed his chin, staring at the items arranged side by side. *Now if only—*

"Cathy!" he shouted. "This group here, coded Ash 5248 through 5250! Were any organic remains found in association with the metal bits?"

The altercation at the far end of the shed broke off.

"Macaulay!" Ordoñez-Vico snapped. "Don't interrupt when I'm talking to— Here, what do you think you're doing?"

He came storming down the aisle with Igor and Cathy anxiously following.

Ian licked his lips in embarrassment. "I'm sorry. I just had an idea about how these might fit together, and even what they might be for. But it's probably ridiculous."

"Really?" The general's voice dropped to a purr. "Now I've just been told in great detail that nobody knows whether these things do anything or not, let alone what the natives used them for. I'm delighted to hear you contradict that. Continue!"

Cathy and Igor were both looking furious, and Ian felt the blood rush to his cheeks. He muttered, "Well—ah... If these things are numbered consecutively I presume they were found together?"

Cathy gave a sour nod.

"Were they by any chance in some kind of large enclosed space, what you might call a hall?"

Cathy started, and her annoyance faded like frost at sunrise. "Yes, they were! I recall how excited Olaf was when he got into that building. And he found a great many other similar groups of metal bars, but this is the only one he shipped back to base. It seemed typical, he said."

"Why did you ask about organic remains in association?" Igor demanded, likewise forgetful of his anger.

"Well—uh..." Ian picked up the pear-shaped object in two fingers. "This is very light, isn't it? But that disc and these bars are very heavy and solid. Suppose the bars were set up over the disc"—he made illustrative gestures with down-turned fingers—"and this bob were hung from the cross-piece so it could swing freely. You'd need to prevent it being blown around by

draughts, wouldn't you? So you'd close the lot in with something non-metallic, like cloth or matting, and there you'd have it."

"Have what?" Igor barked.

"Ug... Well, wouldn't a species with electromagnetic senses be very interested in the approach of an electrical storm? Particularly if they were in some kind of shelter, and wanted to decide whether to leave it or not on a longish journey."

There was a dead pause. Then, all of a sudden, Cathy said, "Barometer!"

"What?" Ian blinked at her.

"Something I found at the peat-site and couldn't make head or tail of: a sort of bellows-arrangement, but collapsed." She slapped herself on the forehead. "Why in hell haven't I programmed the computers with data about storm-warning devices? Ian, this is incredible! It makes dozens of things fit which never occurred to me before!"

Igor let go a great gust of laughter and flung his arms around Ian in an exuberant embrace.

"Very interesting!" Ordóñez-Vico said in an acid voice. "A complete stranger arrives here for the first time, and in a matter of days he makes sense of something which I've been assured made no sense. I find that a most suspicious circumstance. Why, pray have you pleaded such total ignorance?"

There was another pause, but this time it crackled. It stretched

to five seconds, ten—and then Ian clenched his fists, his face as red as fire, and took a pace to confront Ordoñez-Vico.

"Because, damn it, there are a mere thirty people looking at a whole damn' planet across a hundred thousand years! You don't seem to understand what's involved! Listen! You come from La Paz, don't you? Right: imagine it without its people. It stands there empty. No one clears that blocked drain. The rains cause a flood. Dead leaves build up in the gutters, they rot, and seeds start to sprout, blown from gardens and parks. Weeds blot out the flowers. The paving-stones twist and heave as the tree-roots burrow under them; grass grows in the cracks, moss and lichens appear on the walls as the foundations of the buildings shift. The glass cracks in the windows, and the rain blows in, and the wooden furniture starts to rot and crumble. Books dissolve into a soggy mess, birds flit in and make nests on the shelves, and insects take shelter in closets and bathrooms and behind oil-paintings. Fungi move in too, and creepers, and mould. Wind-borne dust gathers in corners both outside and inside the buildings; soon, that's also overgrown."

His eyes were focusing somewhere far beyond the face of the astonished general at whom he appeared to be staring.

"There's a landslip somewhere. A concrete wall collapses,

opens a whole building to the weather. There's a tremor, and a hundred buildings fall. All that can happen in one hundred years, and it's only the beginning. La Paz after a century, tumbledown, covered with creepers, the home of wild animals and snakes and butterflies and birds—how much could you tell about the way of life of a human family by burrowing into the rubble and rotting leaf-mould, hm—if you were from another planet and had never seen a live human being? Ask yourself that! Here's a piano-frame—but you have no ears, you never imagined music! Here's a tableknife—but you don't eat, you only drink liquids! Here's a sewing-machine—but you have fur and don't wear clothes! After one century, how much sense would you make of what remained? And we're not talking about a hundred years here. We're talking about a hundred thousand! Ignorance? Don't make me laugh! It's taken genius for the people here to find out what they do know, and it's small thanks to the short-sighted fools who picked on you to come and pester them!"

He spun on his heel and marched away.

For a long, long moment Cathy and Igor stood with their eyes shut, expecting the landslide to crash down. But the general remained curiously silent. They blinked at him. He was very pale and seemed at a loss.

"Ah..." he forced out at length. "I believe—yes, for the time being I've seen enough of what's in here. You may carry on with your work. Good morning!"

And he too turned away, with slow worried steps, towards the exit and the bright subtropical sunshine.

VIII

NOW FOR THE VERDICT . . . !

The staff, both those scheduled to remain and those about to depart, were visibly nervous as they congregated at the refectory to hear the result of Ordoñez-Vico's investigation. The most nervous of them all—and the last to arrive, apart from Rorschach who was accompanying the general—was Ian.

He hesitated a long time outside the door, his head in a whirl.

I never thought so short a time could pack so many impressions into my memory!

They all seemed to swarm up to consciousness at once.

Seen from the hovercraft in which they had crossed to the mainland of the nearer continent: a flock of bright globular flying creatures rising to greet the dawn, more like jelly-fish than any Earthly bird—supported by balloonets of hydrogen, expanding as the day grew warmer and allowing them to float inland off the breeze from the ocean, there to trap blown seeds and tiny insect-like crea-

tures on sticky tentacles by way of food until evening came and the wind again carried them back towards the shore and the tops of the trees where they passed the night.

Trees? Not exactly. But tall plants with drooping tendrils and many close-set pale green plaques on each that absorbed sunlight and at night shrank close to the stems again to conserve heat.

On a grass-like sward that stretched nearly to the horizon: a herd of animals related to the vanished natives, draped in loose dark blue or dark red skin almost as thick and tough as that of a rhinoceros, breathing rhythmically—their upper and lower carapaces pumping up and down like a bellows and an orifice at each end of the body opening and shutting in turn—while they cropped the underbrush.

And, stalking them, a small predator with four incredibly long walking legs and its frontal appendages reduced to a counterpart of fangs: two deadly-sharp horny daggers.

And on the rocky floor of an old volcanic caldera, a colony of brownish creatures from the same general category complete with their female elders: these latter, huge and sedentary and swollen with their embryonic young basking in sunlight while young active males brought them succulent branches, fungus-like growths and—why, nobody yet knew—chunks of

rock as big as a man's head.

And at the first site he was taken to: humming machines quartering back and forth on the floor of a pit already some fifteen metres deep, automatically determining with gentle sonic probes whether anything solid lay under the cover of decayed vegetation, then yielding place to the other machines which cut the cover away with high-pressure water-jets and gathered it up and brought it to a conveyor that took it over the crest of the next low hill and piled it into a huge spoil-heap.

There he had seen alien artefacts uncovered, not by the score or the hundred, but by the thousand in the course of one single day: every precious scrap being sifted out, labelled, photographed, probed, and reported to the computers back at base by way of a line-of-sight relay on the hilltop. Other, more distant sites had to report by satellite, but this was the closest.

All the appurtenances of what humans would call a city were here: buildings, most collapsed but some still roofed, and streets and roadways; what might be some kind of temple, perhaps, or public meeting-place, in a complex at the centre with a library—a store of printed crystals—and hive-like dwellings equipped with water-pipes, air-vents, mysterious charcoal-like bars sunk in the walls; what might have been a market, or possibly a botanical park, for be-

fore the site was buried a species of plant from the other continent had managed to seed and grow through a few seasons...

And there were vehicles, or their skeletons, with a wheel at the front and two behind and the space between full of some substance that had rotted very quickly and left only a few stripes of metal to indicate its actual shape, and there were articles made of glass, and many of metal, and what must certainly have been trays and dishes and containers, and what correspondingly could never have been anything used by creatures shaped like men.

Puzzling niches marked the walls facing the streets. More were to be found indoors... but these people had never fitted doors, just doorways. There were traces of organic compounds in all niches, but those outside were different from those within.

So much—so incredibly much!

Despair darkened Ian's mind.

To think that my fit of bad temper may have put paid to all the effort that's been sunk into the project! Oh, they haven't said as much, nobody has even mentioned the idea, but—I'm a fool!

He drew a deep breath, summoned his courage, and finally joined the rest of the staff in the refectory. They glanced at him, and a few nodded, but they were all waiting for Ordoñez-Vico.

In silence Ian sat down, by himself, near the door, and waited likewise.

ALL THE WHILE he was touring the digs, the general had been quiet, and sullen. He had listened a great deal, and constantly consulted his lie-detector, but said hardly anything. Three days ago he had returned and called in his spy-eyes, and settled to the chore of analysing their records. Since then, gloom had gathered until it was like a fog shutting out the sunlight; one wanted to shiver even at high noon.

One or two people had said flatly that even if they were ordered to, they were not going to go home. They did not sound as though they expected to be believed.

Small wonder. To be marooned with a group of thirty would be bad; with a third as many, or a fifth...

And here was Ordoñez-Vico in his sprucest uniform, and Rorschach bending like any restaurant waiter to pull and push his chair as he sat down. It was impossible to read any emotion on the Director's face.

The general looked around the room slowly, his eyes picking out Ian and lingering on him; Ian quailed inwardly.

And then he spoke.

"It is time for me to state what report I propose to make to the UN. Shorn of its details, it runs like this: The scientists here are contending with a nearly insuperable task, but they have made astonishing progress under great difficulties and deserve the maximum possible continuing sup-

port."

There was a moment of stunned silence. Then there was an almost hysterical outburst of laughter, cheers and clapping. Ian sat bewildered, staring at the still pale face of the general.

Who waited until the tumult died away, and then went on: "It is I believe fair for me to say that my mission was not wholly the fault of those on Earth. To some extent you have yourselves to blame that the true difficulties you are facing are not correctly appreciated at a distance of nineteen lightyears. One is accustomed to imagine that modern science is capable of practically anything; have we not, after all, broken through what was for long held to be the ultimate natural barrier, the speed of light? For my own part, until Dr Macauley painted so clear a picture for me that I could almost see it in front of my eyes, I was not—to use a crude but appropriate phrase—'feeling it in my guts.' I'm obliged to Dr Macauley, and so should you be."

Everybody turned to look at Ian, and there was another burst of clapping. Ian remained as still as a statue.

"I have just two more things to say. First, Director Rorschach has volunteered to remain for another tour, owing to the fact that I must return and will take up space and food and air in the *Stellaris*. I am impressed with his record of achievement and will support his decision when I get

home.

"And, second . . ." He licked his lips. "I believe I may have offended several of you. I apologise. I had braced myself for what I knew would be a distasteful task. I had not expected to find it also absurd. I wish you all the best of luck."

And this time the clapping was for him, while he sat stiff and immobile with tiny beads of perspiration pearling down his forehead.

Then the meeting broke up and everybody rushed at Ian—who fled for the exit and the corridor leading to the seclusion of his room, leaving his colleagues behind to stare at one another in astonishment.

THIS WAS Ian's door. Cathy tapped at it. Beyond, there was a sound of movement and then a weary question: "Who is it?"

"Cathy. May I come in?"

Faintly, music could be heard. There was a celebratory party in progress in the refectory. Traditionally there was a party just before the ship's departure, but this was for a better reason than ever before.

"Ah . . . Just a second." The lock clicked, and there he was rather shyly gazing at her.

"May I come in?"

"Well—of course." And as she stepped over the threshold he went on, "I'm sorry I disappeared; it was very rude of me. But I'd been so sure I'd sabotaged

the whole project, and when it turned out I'd done the opposite I simply couldn't believe it . . . Well, what can I do for you?"

She looked at him levelly for a long moment. Then she said, "I suddenly realised that I want to kiss you."

"What?"

"You heard me."

"Yes, but . . ." He shook his head blankly. "Why?"

"Why?" She almost stamped her foot. "How can a man be so brilliant *and* so obtuse? Listen, Ian. What agonies you've been through came from inside yourself. Mine came from outside. My brother must have known he was likely to die before I got back, but he also knew how much I'd set my heart on being selected to come here, and he encouraged me and I made it and then, literally within minutes before learning he was dead, I was told that the only thing which might have compensated—being able to carry on with the work he too wanted to see done—hung in the balance and might be snatched away. The fact that it wasn't is due to you, because instead of being mealy-mouthed and servile and cautious like the rest of us you stood up to the general and let your real feelings show. You have a passionate commitment that I envy."

"But . . ." Ian sounded dazed. "But I remember clearly, when you sat down to weep for your brother, I was wishing I could

feel so deeply. I can't. I don't have any passion in me."

She gazed at him searchingly. After a pause she said, "Is that true? I doubt it. I think it's more that you've never had anybody to feel passionately about."

"I . . ." Ian shook back his untidy hair and squared his shoulders. "I guess it could be."

"No family?"

"I was an only child, and orphaned young," he muttered.

"That accounts for a lot. But don't imagine you lack the capacity for deep feeling. You've demonstrated that it's there, even though it may be a trifle stunted. Unless you have any convincing objection I propose to thank you for it in the nicest possible way. Lock the door and come here."

AFTER A LONG TIME that passed in a flash, she stirred in near-darkness and looked at her watch, which she had kept on.

"Let's go and join the party," she said. "The ship is due to leave at dawn, and after that we shall have more work than we can handle. Come on and make your goodbyes."

Stretching like a satisfied cat, incredibly relaxed, smiling as though the muscles of his face had forgotten how to do anything else, Ian said, "Cathy, why—uh—why not somebody already?"

"What? Oh!" She shrugged, her dark hair loose around her creamy bare shoulders. "Well,

naturally: several already. Ruggiero, Olaf before he became involved with Sue, even—after a lot of hard work—Igor . . . But there's so much else to think about, and we're not here as settlers, so we don't think in terms of one-to-one relationships. Besides, there's never been anybody here to whom I felt I could grow close."

"You think you could to me? But you scarcely know me."

"I know you better than I did an hour ago, and I like what I've found out. I think you're the sort of person I can go on getting to know better and better for a long time. Which is a fair summary of what I've always told myself I wanted." She patted his arm affectionately. "Let's move. I don't suppose anyone is wondering where we are, but if you don't show up at all they may get worried."

NEXT MORNING, when the *Stellaris* lofted skyward with that strange faint hum he had been told about, but of course had never heard—that vibration which made the very fabric of space seem to buzz with controlled gravitic energy—she stood at his side, fingers linked with his, and seemed to share the strange, rather shy pride which was burgeoning in his mind, pride that held out the lure of such hope as might make even the most vaulting ambition take on the promise of eventual reality.

lost natives had regarded as necessary?

CATHY'S PREDICTION had been all too literal. From the day of the ship's departure onwards, he did indeed have more work than he could cope with.

IF ONLY I could have some other brilliant insights now and then, to keep my spirits up. . . !

But they didn't materialise. That wild guess about the weather-prediction machine remained unique, and—worse, but unavoidably—seemed less memorable as the days leaked away. True, programming the computers with every known item of data concerning meteorological instruments did produce a very wide assortment of brand-new hypotheses. But that was what they remained. Not one translated into a certainty.

And for all we can tell it may have had nothing to do with weather after all. Given a simple physical principle—no matter what, magnetism, atmospheric pressure, refraction, anything—one can work outward from it along countless divergent paths. Maybe that bob-hanging-on-frame arrangement wasn't a tool or an instrument; maybe, in their view, it was a religious symbol or a work of art!

"Occam," he kept saying to himself grimly. "Remember the Razor: don't multiply entities beyond necessity!"

But who could say what the

A PATTERN of living and working had evolved since the foundation of the base which he readily adapted to. One thought in terms—effectively—of months, but they were formally termed "Progress Assessment Units". Each numbered thirty days, of which two at the beginning were spent on travel, to the outlying digs; then twenty were spent at the actual sites; then two more were allotted for a return to base, and three days of intensive conferences with the entire staff were topped off with three days of free time. . . which, so far as most people were concerned, meant constant debate, an informal continuation of the conferences. To prevent strain building up to the point where people might become stale, ill-tempered or obsessional, Rorschach had decreed years ago that the middle day of these last three would be the one on which nobody, but *nobody*, talked shop. In the morning and afternoon there were generally competitions; chess, go, athletics, darts, gymnastics, bridge and half a dozen other pastimes were selected on the basis of a computer-generated random-number list. And in the evening there was a party.

It was a well-balanced pattern. Given that the people here were dedicated volunteers totally committed to the work in hand, it

would have been difficult to make them relax more frequently. The twenty-day periods of absolute unrelieved hard work typically generated just a fraction more mental activity than could be digested in the three-day conference period, and the "month-end" relaxation slot was just about long enough for them to unwind without losing sight of what they had been on the point of doing next.

Proof that the system was succeeding lay in the fact that even though thirty highly intelligent, highly individualistic experts were isolated here nineteen lightyears from Earth with the most baffling possible problem, there had never been a feud, or any faction-forming, or any disagreement that came to blows. There were, inevitably, differences of opinion about precedence and priorities, because the available resources were so limited; these, though, fell into the category that might be called "schools of thought" rather than any real rift among the personnel.

Perhaps, Ian thought, living in the shadow of a thousand centuries of renewedly mindless evolution—as though the emergence of intelligent creatures here had been a mistake, a disturbance of the natural order, which now was restored—had made these people more careful about the use they made of their precious talent: reason.

AFFABLE, STIMULATING, with a phenomenal grasp on the overall pattern of what had been found here, Igor Andrevski took him on a tour of the major sites as a first move. At the site code-named Peat, Cathy was uncovering little by little the traces left by perhaps a couple of million natives: each a thinkingbeing, each astonishingly imaginative... Well, it went without saying. Had they not been like that, they could never have made such progress in so short a time.

And at Ash, Olaf and Sue were shifting thousands of tons of volcanic débris, revealing a very similar city but differently coloured: grey-white where Peat was yellow-brown. The problems were similar, though. At Peat, biological action had rotted many of the buried artefacts before they were flooded by water that became stagnant and oxygen-free, giving rise to conditions like those which, back on Earth, had preserved the famous corpse of Tollund Man. At Ash, the heat of the falling volcanic ejecta had dehydrated the relics...but that had not been until hundreds of years after they began to rot.

Moreover the design, the layout, of the city was also similar. It was similar at the site name Silt, too, where Ruggiero and his helper were probing what might have become a bed of sandstone had a crustal plate not tilted as well as slipping when it accom-

modated with its neighbour, so that what might have been expected to disappear below sea-level arched back up again to compensate for a sudden nose-dive a hundred kilometres away.

And there was Seabed, which they visited in aqualungs, where gorgeously coloured weed floated in the microclimate of the currents caused by the encrusted streets and roadways because they were transverse to the tides here, and weird purple animals bombarded them with stinging but harmless jets of a substance which could kill many native fish.

And again the pattern was similar at Snowfall One, bar some minor changes which could easily be due to climatic conditions. And . . .

Late one night, in the cosy comfort of the awning which they had extended from the side of their hovercraft, with a bitter wind outside and the savoury aroma of the food delivered by their portable processor rich within, Ian said suddenly to Igor, "One of each. And only one of each."

Igor glanced at him, his expression serious. "Yes. I find it incredible, and I suspect you do, too. Amplify."

"Well. . ." Ian hesitated. "Could any intelligent species be so easily bored that having done a thing once that would be its limit?"

"Tell me what you think. I've

been here more than four years. I'd welcome your fresh approach."

"I think not," Ian said. "Unless—and this is crucial—unless they had such a perfect grasp of potential, unless they had such vivid imaginations in other words, that they preferred insight to experiment."

"But where in the universe can you start from that will permit you to do that?" Igor slapped his thigh. "There are phenomena on phenomena. You *cannot* extrapolate from the macro to the micro, and I don't care what anybody says. If these creatures possessed a sense which detected electromagnetic fields, and we hold that they did because that's the path evolution has followed in other cases, then I don't see how that can have taken them any more directly to the concept of energy and mass as interchangeable than—than our sense of hearing led us to the barometer or the altimeter or the vacuum pump, even though those all relate to the same environmental medium which conveys sound. And yet the fact stands: they appear to have invented the city *once*, and at every site we've dug over we find precisely the same pattern, modified only insofar as we move further and further away from the centre. I wish our computers would tell us whether that centre is more likely to have been Ash than Peat! My money is on

Ash—but what we take for simple and primitive utensils and tools may, on the contrary, have been sophisticated, final versions of things that began as something far more complicated! Compare a vacuum-tube radio set with its modern counterpart, completely solid-state and grown rather than manufactured because in effect it consists of three crystal-diffusion units, very carefully doped and very carefully imprinted."

Ian gave a thoughtful nod, mentally reviewing the pattern of cultural diffusion which was in its way analogous to the crystalline-diffusion process Igor had just mentioned.

"Every city," he said at length, "has all the most advanced features: at the centre, a complex of some kind which includes what you've baptised a 'library', plus large halls, and open spaces which probably correspond to a square or marketplace in human terms. Good. But it isn't a simple matter of this particular pattern suiting a particular kind of creature—more, it's a matter of this creature having invented a pattern and got it right the first time, so that whenever a new city was created the former pattern was modified in only the most minor details."

"And some cities, which by both geographical proximity and the associated relics we can term the oldest, have those modifications as indisputable later

additions. . . . Hmm!" Igor snapped his fingers. "I just thought of the *Stellaris*!"

Ian looked at him with respect. "I get the point," he breathed. "After every trip, a change derived from recent experience... But—but dammit! I find it just as hard to believe in a creature which learned that quickly from experience, and thought it worth applying the knowledge straight away, as I do to believe in a species that never bothered to experiment and always got everything right at once!"

"Yet that's what we've run into!" Igor said savagely. "One aircraft, for example"—he gestured with his thumb over his shoulder towards the Snowfall One site where the craft had been discovered—"when it's definite that they had fast long-distance communications for a long time. Why not dozens of them? Were they all broken up for scrap and salvaged during a period of decline so brief we haven't been able to tap into proof of it?"

"One ocean-going ship," Ian concurred. "Which is even more extraordinary. Search the sea-beds of Earth, and you'd come upon scores, hundreds of fairly well-preserved wrecks. And in a period of decline—which I grant you is a strong possibility—how would they have been able to dredge the ocean-floor for salvable gear?"

"Exactly. That takes considerable technology." Igor shook his

head, his expression lugubrious. "And where did they launch their moon-ships from? We've never found even the counterpart of an airport, let alone a Cape Kennedy or a Baikonur or a Woomera!"

"I can see only one explanation," Ian said after a pause during which he listened to the wind howling in the nearby mountains.

Igor brightened. "You see even one possibility? Share it with me!"

"That by our standards just about every member of the species was a genius, and could undertake calculations as a matter of routine which we'd find so tiresome we'd have to hand them over to computers."

Igor thought about that for a while, and finally nodded.

"It's a valid insight, that. At any rate I think so. I can sense a lot of implications fanning out from it, as I'm sure you can. It would lead at once to the success of virtually every new invention they came up with. Is that what you mean?"

"Mm-hm." Ian rubbed his chin. "It would explain why only one ship can be found sunk; the second time, they got it so right that for as long as they used ocean transport they never had another wreck. It might even explain why there are no airports or moon-rocket launch-bases."

Igor blinked at him. "I'm not sure I see quite how—"

"Because they went for the maximum return on minimum effort every time," Ian broke in. "Rather than waste time and energy on ancillary systems, they made everything self-contained and self-supporting. That flying-machine: didn't Ruggiero say point-blank that it was capable of vertical takeoff?"

"Yes, and I think he's proved it. You know it was pretty badly crushed, as what wouldn't be after millennia buried in a moving glacier? But all the computerised reconstructions he's developed for it agree on exactly that point: it had landing-gear adequate only for a direct descent onto flat level ground. It didn't roll or taxi; it squatted."

Ian gave a faint smile. "Yes, I've been spending a lot of my time since I arrived reviewing data of that kind. I was very struck by the points Ruggiero has made concerning the identifiable relics of advanced technology...not that there are very many, are there?"

"Maybe we'd be worse off if there were?"

"That's a painful but significant argument." Ian pantomimed an exaggerated wince, as though he had been stabbed in the heart.

"Yes, except... Never mind; I didn't mean to interrupt. I think you were going to say something else."

Ian hesitated. He said at length, "Yes, but a point has suddenly struck me which I think I

was blind to overlook before. Igor!" He hunched forward, gazing at the older man. "Was it when you realised there really was only one of everything here that you decided it would be worth asking for the help of someone like me?"

"Of course. If it weren't for that, a palaeolinguist would be no more help here than—than a blacksmith. So long as we imagined they were very like us indeed, we assumed there must have been dozens, perhaps hundreds, of different languages. There's an excellent chance, based on our recent discoveries, that language too may have been invented once on this planet, and evolved but never developed into the range of separate families you find on Earth. My knowledge of linguistic evolution is sketchy, but I fancy something of the sort happened in China. Isn't it true that over a period of a millennium or so the spoken language there changed radically, but the written language remained comprehensible?"

Ian nodded, focusing his eyes on nowhere. "And particularly in view of the fact that they very likely imprinted their 'inscriptions' directly, so that language consisted of shared patterns of nervous impulses common to all individuals—in other words, they probably didn't use names because they identified themselves by simply being!" He sat upright with a jerk.

"Hey! Now *that's* a point! In a sense, maybe this species never stopped talking! Because so long as they were alive, they were interacting one with every other! Igor, I'm obliged. You just gave me a hell of a good takeoff run!"

X

OUTSIDE, AS EVER, the sun beat fiercely down, but in the relic-shed it was cool and the light was filtered through tinted windows. Ian sat at the bench facing the computer remote, double-checking the catalogue numbers of a dozen objects ranged to his left: the palm-sized, finger-thick blocks of artificial crystal which the aliens had imprinted with microvolt currents, an aeon ago, and which still betrayed at least a hint of the information-bearing pattern frozen into their molecular structure.

Before him was a modification of a device which was used at the digs to detect the presence of magnetised materials, a cradle-like frame connected to a series of meters and thence to the computers.

Behind him the door opened. He ignored it; today was the day after the end of the work-period, and people were bound to be bringing in newly-discovered artefacts, but he had particularly requested that any further "libraries" be left undisturbed so that in due course he could apply

his embryo theories to them.

Then a light hand stroked his cheek and a voice murmured close to his ear, "Had a good month?"

He almost dropped the crystal whose number he was verifying.

"Cathy!" he exclaimed, and hugged her around the waist. "Yes—yes, I think I have had a good month."

"What are you doing?"

"Making some extra calibrations of the patterns printed in these things. Looking for a time-dimension, mainly—because if there isn't a progression from beginning to end, an element of sequentiality, we shall almost certainly never understand their language."

"Sort of like trying to figure out whether a human book was read this way up from left to right, or the other way up from right to left?"

"Absolutely the same sort of problem."

She perched on the side of the bench at his right, long legs swinging, the zipper of her blouse drawn far down on her bosom for the heat.

"I think it's a miracle you can conceive a way of reading their language at all," she said after a pause.

"If we do, it will be," I sighed. "But Igor gave me a fascinating insight which suggested a potential lead. Back on Earth, when I was first introduced to the idea that these blocks might be

inscribed with a counterpart of writing, I immediately assumed pens, styli, typewriters, whatever the hell."

"No tools?" Cathy said sharply.

"No tools. Because since it's been shown that some of the surviving species can print rocks directly with a magnetic trace, we've been able to consider the most interesting possibility of all: that they didn't have to invent writing—they evolved it. It was as natural to them as making mouth-noises is to us. They merely refined and improved the materials. Instead of making do with chunks of rock, they manufactured an ideal variety of crystal. Here it is." He waved at the array beside him on the bench.

"And that means their writing was more like the groove on a disc-record, or the pattern on a tape." Cathy nodded. "With the bonus effect that they could read it back directly."

"It goes even deeper. They didn't have to invent a system of sound-to-symbol correspondence. Their symbols were a direct reflections of a real-time process going on in their nervous systems; in other words, they experienced the imprinted pattern as though it were being—ah—spoken to them. That is, assuming this electromagnetic sense was what they used where we'd use sound, and all the indications point that way. I asked Lucas to make sure that next

time his people are studying a colony of animals, they should measure the changing electrical fields as well as merely observing."

Cathy raised her eyebrows. "Ve-ery interesting! I can see another consequence you haven't mentioned."

"What?"

"Well... how could they tell lies?"

Ian whistled. "That's a point, isn't it? I hadn't got that far. You're probably right. I don't see how they could be dishonest with each other... Hmm! Do you suppose that's why they got from nowhere to the moon in such a hurry?"

And, before she could answer, he snapped his fingers. "Yet they must have had some kind of non-real mode of—of speech. If communication were limited to actual experience and present mental state, it couldn't include hypotheses."

"But couldn't they be labelled?" Cathy suggested. "I mean... Well, under most normal circumstances a human being can distinguish between what's remembered and what's imagined. Maybe the same sort of overtones were involved in their communication."

"M-m-mm..." Ian plucked at his chin; he had decided to let his beard grow out, but as yet it was sparse. "I think you're on to something. I'll check it out when I have the time. For the moment,

if you'll excuse me, I have to finish calibrating these; I meant to get them out of the way last night, but I ran into a snag."

"What exactly are you looking for?" Cathy said. "Apart from the temporal sequence you mentioned. What starting-point can there be in the case of a non-human language?"

Ian gave a humourless chuckle. "Now that's a good question, if you like! Basically, patterns that repeat in similar contexts. I'll show you."

He picked up the nearest crystal, laid it in his cradle, and pushed a switch. At once, on the big screen above which was linked to the main computers, a complex stable pattern appeared somewhat resembling a transform of the sounds made by a full symphony orchestra, in seven colours.

"Those colours correspond to levels of impregnation," he explained. "Not physical levels—degrees of intensity. Of course I can go to physical parameters too." He touched another switch, and the colour-distribution altered instantly, though the basic form of the display remained the same.

"And I can go arbitrarily to various temporal parameters—read in sequence from left to right, up to down, this face to the further one... Topologically speaking though, reading all the crystals in the same orientation should produce a sufficient de-

gree of invariance to determine whether any patterns which repeat are isolable as the equivalent of phonemic units."

"Uh . . ." She shook her head.
"You just lost me."

"Well, suppose when I've finished calibrating every crystal found at one particular site—which will take quite a while until I figure out an optimum configuration to automate the process with—suppose I find there's a pattern which can be isolated in every single block . . . which actually is too much to hope for, so I'd set the machines to determine what patterns occur on the *n*-plus level, in other words what patterns have been found more often than once per crystal. Then I'd sift those, looking for the one which occurred literally *the* most often, and make an assumption about it."

"Such as?"

"First of all, that it was a statement concerning an individual member of the species. The equivalent in human terms would be 'he is', 'she did', 'they were'—that kind of thing. And then I'd look for associative correspondences, or rather I'd programme the computers to do that. I'd look for a phrase of the structure 'he is xyz' which I could match up with another 'they are xyz'. And then I'd cross-match all those with other phrases of the same general form. You see, I'm looking not for a translation, which would be ridiculous, but

for a grammar. Once we have a grammar, the rest can be filled in by trial and error."

Somewhat doubtfully she said, "Do you mean by 'grammar' what they taught me at school?"

"Oh, no. Not unless you were very lucky. Where were you educated?"

"Partly in Dublin and partly in Athens."

"Ouch!" Ian threw up his hands. "In that case it's a miracle you found your way here—if you asked me to name two really reactionary centres of linguistic teaching, stuck in the mud of the classical languages even after generations of fresh insight after fresh insight into what language is really doing . . . Excuse me; that's a bit of a hobbyhorse of mine. But you weren't selected to come here for your brilliance in linguistics, so . . ." He interrupted himself, falling over his tongue. "Oh, sometimes I think I'm the most tactless person alive! I mean, I know all about your work with Soper and Du-pont at the Viking sites in Nova Scotia—"

"Actually what settled the matter was the colour of my eyes," she snapped. "Idiot!" And blew him a kiss, and added, "Go on, will you?"

"Uh . . . Sure. A grammar is not what I suspect was taught to you: a set of rules which lay down that this is right and this is wrong and this is a solecism but permissible—hm?" He tousled his

hair with distracted fingers. "No, it's far more like a system of topological relationships, and in fact modern grammar borrows much of its terminology, like invariance, straight from topology. To give an example: it's not a question of 'if member-class-A then member-class-B'—nothing to do with 'the adjective agrees with the noun in gender, number and case'—but much more like 'if member-class-B then member-class-A already happened provided A and B are members of the same field'. . . Kind of a feedback situation!"

"I think I follow." Frowning. "But even assuming that this is true of human languages, what grounds do you have to imagine it may be true of the native languages?"

"Well, Igor's insight suggested that they may not have had *languages*, plural, but at worst the equivalent of dialects. . . which would be a logical starting-point anywhere in the universe, come to think of it. It's been shown that all human languages have a fundamentally identical structure—"

"What?"

Ian looked faintly surprised. "What else would you expect, given that we all go on two legs, all make noises with a mouth in the front of the head, and so on? The fundamental structure is associative; juxtaposition and sequence in time are a perfect instance of invariance in the

grammatical sense. You make a statement about event A and object B by composing an utterance that connects the agreed sound-symbol of each with the other. If a language can be called a language then it's got to have at least that intrinsic feature, regardless of the decorations added later. You surely must have been told that baby-talk in every known human language is grammatically consistent?"

She shook her head, seeming a little dazed.

"Well, it's true. A Japanese mother and a German mother and a Russian mother and a Maori mother will all use the same kind of grammar when teaching their babies to talk: the very simple two-unit pattern which was what you and I and every other articulate person began with."

Still apparently a trifle dubious, Cathy nonetheless nodded. "Even so, if you establish this kind of pattern, how far has that taken you? I mean, where do you start the actual translation, which is what it's all about?"

Ian leaned back with a sigh. "Oh, once we've got past the initial stage of analysis, it'll be a bit like what Ventris did with Linear B, except he did have some known language to work from. . ."

"Details!"

"I'll show you where to track them down in the computers. The story's quite fascinating, a real

piece of detective work. It turned out that what he had, even though everyone else said it couldn't be, was archaic Greek, written in a script meant for a totally different kind of language. And you ought to look at the way the Spanish priests misread the writing of the Amerinds, too, because the only script they knew was phonetic—more or less—and they had no vaguest notion of what a hieroglyphic syllabary was like." He sighed again, more heavily.

"Ian dear!" She leaned towards him. "I don't want to be told about your problems. I can imagine them. I want to be told about your ways of solving them!"

"Sorry!" He pulled himself together and essayed a not too successful laugh.

"Well" he resumed. "The next stage is to apply some *a priori* assumptions. Igor mentioned one of the most important when we were having that initial confrontation with Ordoñez-Vico. Most, though not all, human languages differentiate between masculine and feminine, in noun and pronoun structure particularly. Though of course a great many languages extend the concept of gender far beyond anything found in European languages. So a good point to start would be to look for structural differentiation that might conceivably correspond with the sex-change of the natives. It may not work; we

may not come up with anything as simple as 'he does XYZ' versus 'she does XYZ' because the—the word-units may be absolutely different for the active male phase and the sedentary female stage. As it were, 'he eats' might turn into 'she devours'. But the principle is the only one we have, so if a hunt for sexual indicators fails we'll have to carry on eliminating all the possibilities in succession. It goes without saying that a creature like what we find here must breathe, eat, excrete, relate to its fellows, communicate, and so on. So we'll have to sieve out any such word-units and test them for consistency and invariance."

He glanced at the crystal before him. "Oh, that's been in there long enough!" he said, and removed it and reached for another. Craning forward to look at the screen as he did so, Cathy exclaimed.

"Say, when you touched it the pattern altered!"

"Well, of course." Ian blinked at her. "I'm a conductor, and so are you."

"No, that's not what I mean." She slipped down from the bench. "It was more like... No, I'm sure those meters jumped. Have you checked the crystals for a piezo effect?"

Ian sat rock-still for a second. Then he grabbed her hand and bestowed a smacking kiss on the palm.

"Genius!"

"What?"

"There's an old saying: the genius sees what happens, but the plodder sees what he expects to happen. Ay-ay-ay! Even if this does mean I have to re-calibrate every single damn' crystal, I think what you just did was tell me how to locate the time-dimension. Hang on!"

He dropped the crystal back in the cradle and this time, instead of letting it lie there, pressed on it, at first gently and then with increasing force until the pattern on the screen dissolved into a blur.

"That's it!" he shouted. "Cathy, you're wonderful!"

xi

DIRECTOR! May I talk to you for a moment?"

Strolling around the perimeter of the base as twilight fell, Valentine Rorschach didn't pause as Ian called from the window of the relic-shed.

"Provided you quit addressing me so formally!" he answered. "Come out here and walk with me for a while. You spend too much time cooped up in there!"

A minute later, puffing from having come at a dead run, Ian fell into step beside him. He said anxiously, "I hope I didn't interrupt, but—"

Rorschach did exactly that, with malice aforethought.

"You're driving yourself too

hard, Ian. I hate to say so, but I've seen it happen before and I don't want to have to order Lucas to start issuing you with tranquilisers. You lack perspective, man! You've achieved more within a shorter time of your arrival than anyone since the base was established, at least in terms of generating new ideas for us to follow up. Why is that not enough for you? Is it because you're afraid of losing Cathy if you don't outstrip all possible competition?"

Ian was taken totally aback by the question. He stopped in his tracks, and Rorschach likewise halted, swinging to face him.

"Ian, Ian—Ian... You knew pretty much what I was going to be like before you came here, didn't you?"

Ian nodded. Part of the preparation for his trip, and indeed part of the briefings for everybody due to replace the personnel rotated home, had consisted in face-to-face no-exit confrontations with clever actors taught to duplicate members of the staff here, so that the newcomers would be acquainted with their failings as well as their virtues and any dangerous weaknesses on their own side would be revealed.

"Well, I imagine they covered everything except this new baldness of mine," Rorschach went on, tapping his over-high forehead. "Equally, they took you to little bits, you know, and

they warned me in the tapes that arrived with you that you were liable to over-commit yourself. So... Let me put it this way: I'm delighted you called out to me, and that we're talking out of earshot of everybody else, because otherwise I'd have had to contrive some elaborate excuse to have a private chat."

Ian blinked at him.

"Oh, not to issue any kind of—of reprimand!" Rorschach beat the air as though it had annoyed him. "Just to warn you that you're overdoing it, and there's no need."

Licking his lips, Ian looked around, taking in the now distant shapes of the base buildings, the long shadows left on the glass foundation beneath by the sun as it sank below the horizon in a welter of thinly shredded cloud... and said at length, "You know, for a moment I was going to be angry at having my privacy invaded. But it wouldn't make sense, would it, to prize privacy when we're trying to peel away all the veils of history from the native race?"

"When you're provoked into it," Rorschach said in a judicious tone, "you're capable of admirable insight. I don't mean on the professional level; you've demonstrated that beyond a doubt, and in fact I've complimented Igor on his insight in nominating you for recruitment. No, I'm thinking rather of..." He turned and gazed towards the setting sun.

"I'm thinking of the point I touched on just now: having to run to keep up. Agreed, it would be marvellous if we could solve the mystery of the aliens before the ship comes back. But what can we do here that will decide whether or not it does return?"

THE WORDS struck a chill deep into Ian's mind. After a pause for sober reflection, he said, "Do you honestly think they may not send her back?"

Rorschach spread his hands in an empty gesture. "It's one of the possibilities I have to bear in mind as Director of the base. That's all. Oh—no, it isn't quite all. I was going to make a point in connection with you and Cathy."

"What?"

"Over the years since I was appointed, I've done my best to devalue all the things that got in the way of our thinking at home. High on the list is jealousy, of course. Did it ever strike you that it's most corrosive when it occurs in what might otherwise have been a stable relationship, immune from outside interference? Don't bother to answer; as I said, when you're pushed to it you possess admirable insight. But someone has to push, and I'm pushing, and what I mean is that Cathy had been here two years already when you arrived, and at the present moment nobody resents the fact that she decided it was with you she wanted to establish a permanent rela-

tionship—small wonder, since you're so talented—but the situation is precarious and if the suspicion burgeons in one single mind that you're driving yourself because you're afraid Cathy can be seduced away from you, instead of because you want to solve the mystery that concerns us all... I believe there's no need to labour the point."

Ian remained silent for a long moment. He said eventually, "Valentine, now I know what made you such an ideal choice as Director here. I never met anybody more tactful than you. I'll postpone the request I was going to make."

Rorschach chuckled. "Go ahead and make it anyway," he said. "The answer will be no, but I'd like to have the data on file, as it were, so as not to be taken by surprise."

"Okay," Ian said. He drew up the zipper of his blouse because it was turning cool with the advent of evening, and absently began to walk again, Rorschach keeping pace. Gazing down at the ground, he went on, "I was thinking of something which, I suppose, tipped the balance between success and failure for me when I was working on the Zimbabwe ruins."

"When you proved that what might have been simple decoration was actually a script," Rorschach said.

"Mm-hm." Ian nodded; it wasn't worth pretending to be modest about that, because if he

hadn't done so he would not have come to Igor's attention and would not have been invited here. "I decided that before I could assign any—any levels of priority to the various possible significances of the script, if it was one, I'd have to think myself into the skin of the man who made the inscription. So for a month I lived as he would have done: eating what I could trap or gather, sleeping rough every night, drinking from water-holes shared by animals and hoping that I'd live through the infections I was bound to fall sick with... I stripped myself, little by little, of the ideas I'd brought with me, and climbed back towards the basics, hunger and thirst and heat and cold and dark and light. I got one hell of a bad case of sunburn. But I also got what I'd set out to look for: an insight into the man who inscribed those mysterious symbols."

Rorschach uttered an unashamed whistle of astonishment. "You want to try that here? But how can any human possibly dream of establishing a sense of identity with the Dracoenians?"

Ian stroked his newly luxuriant beard with a lugubrious scowl.

"He can't," was his answer. "On the other hand, he can struggle his way towards a sense of what for them was reality. We see colour, for instance; presum-

ably, so did they because there are eye-like organs on all the large species here. But was colour important to them? I suspect not. I suspect that what we would think of as tone-colour—in other words, the subjective response they had to the *pitch* of an electromagnetic field—must have been what counted for them. I don't know, I can't be sure, but I'd bet on it."

"Even assuming that that's so," Rorschach said after a pause for reflection, "are you asking me—or rather, if I hadn't declined in advance, would you be asking me—for permission to set up house in one of the native city-sites, and try to live off the land, as it were, until you achieved some kind of divine revelation?" He chuckled. "Hunger and thirst and subclinical infection, you know, generate the most surprising attitudes towards the universe, but I doubt whether many of them are valid!"

"Not exactly," Ian said awkwardly. "What I was actually going to ask for was the resources to start constructing a simulacrum of one of the natives."

They had been strolling along side by side. Now, without warning, Rorschach stopped as though he had struck a glass wall.

"Say that again slowly," he requested. "And let me have the full details."

"Well—ah..." Ian made vague waving movements. "What I was

thinking of was a sort of shell, about the right size for a man to fit into, with the necessary movements built in, based on the kind of principle they use for modern prosthetics. I imagine the data to design a gadget of that type must be in store here because the medical data-banks are very comprehensive, aren't they? In effect one would need to feel directly the actual bodily processes of the alien creature. Whether it could be carried as far as the crucial sexual switch, from active male to sedentary female, I don't know, but there could be ways of faking that, I guess. And just so long as the—the world-view was right... For example, suppose one devalued sight to plain black and white but upgraded sound, using a sonar unit, to the point where that combined with enhanced tactility was providing a majority of the user's information about the environment... and assigned additional variety to suggest the range of electro-magnetic perceptions we presume these creatures had, and..." He clawed the air, seeming to grope for the right words. "And as for the hormonal revolution—well, one doesn't have to be a woman to find analogies to the process of pregnancy and labour, even though one does have to throw out a hell of a lot of in-built biases."

He hesitated. "Would that be permissible?" he ventured.

"Not only would it be, it is!"

Rorschach declared with an air of finality. "In fact, I think I can suggest a means of converting the tactile impulses into something more significant to the user. If one were to exploit the known sensitivity of the retina to changing magnetic fields, one might very well— But damn it!" He rounded on Ian. "This is absurd!"

"I'm afraid I don't understand."

"No, you wouldn't. But I should have done. I could kick myself from here to—to the civil-engineering block!" In lieu of which Rorschach stamped on the glassy ground. "Yes, yes, yes! The technology exists for us to get under the skin of another species, and so far as I'm aware it's never been tried! Are we mad? Are we out of our minds?"

"If you really want an answer, and that question isn't simply rhetorical . . ?"

"What? Yes indeed, I do want an answer!" Rorschach's voice had peaked to a near-shout; now it abruptly dropped to normal. "Quite seriously, Ian, a project like yours has been feasible since long before we arrived. The techniques exist, or can be developed from the kind of gadgetry we use to help the blind, the maimed, the deaf . . Lord, that lie-detector of Ordoñez-Vico's has a sense that most human beings don't possess, because it can analyse our body-secretions and compare them with a norm and

then compare the norm with the profile of the speaker's voice. If we do have that gift, it's a long way below the conscious level."

Ian was shaking his head over and over. "No, you're jumping to conclusions, I'm afraid. The real point is this. Not until we had a clear grasp of how different the natives were from us, rather than how much alike we were, could anybody—me, or Igor, or you, anybody—have suggested this plan. Because if it works, what will count is not how much of the aliens we can afterwards understand; it's what they might have understood of us if they'd survived to meet us face to face."

Face strained and anxious in the gathering dusk, he leaned close to Rorschach as though half-afraid he wasn't making himself clear.

"You're absolutely correct," the director said. "And so was Igor when he suggested that we ask for you. You've just put into words—more, into the shape of a practicable plan—something which I've sensed, just as I'm sure Igor must have . . and done nothing about. Because we couldn't see any way of implementing it."

He slapped Ian on the shoulder.

"I think this month I may break one of my own rules. I think we may talk shop on the day when it's forbidden. At any rate, if I know my staff, I can foresee this proposition of yours sparking their imaginations like

a light being set to a blasting-fuse!"

xii

SITTING INFORMALLY around in the refectory, some of them sipping wine or beer or excellent imitations of fruit-juice, the staff listened to the regular bald summary reports with which the monthly conferences always commenced. After hearing the others out, and making his own brief report, Rorschach called on Ian to describe his new idea.

Igor and Cathy had already been told about it, and made prompt, excited suggestions, but the impact on everybody else was stunning. When he had finished speaking there was a long thoughtful silence; then, one after another, people started to nod, gazing into nowhere.

"I think it has something for all of us," Rorschach said at length. "I can see dozens of ways in which it can be expected to generate spin-off in the form of brand-new insights. Let's sort out one urgent question first, though. Karen, can it be done?"

The plump civil engineer was leaning back in her chair with a dreamy, speculative expression. At mention of her name she roused herself.

"Hm? Oh, sorry, Valentine... Yes, I can't think of any reason why not. Though it does depend on how elaborate you want to

make the—ah—the sensory illusions."

Lucas Wong leaned forward. The short, heavy-set medical biologist, half American and half Chinese, took more after his father's than his mother's traditions, and seldom spoke without long reflection on any weighty matter. Now he was uncharacteristically enthusiastic.

"Oh, there may be ways we can get around the sensory problem! Ian, do you know whether you're a suitable subject for hypnosis?"

Ian snapped his fingers. "No, I've never been tested for that, but aren't there drugs which can be employed to make one more susceptible?"

"I'll check that out," Lucas promised, and rubbed his hands in obvious glee. "Oh, this is a marvellous idea, it really is!"

"We'll have to build the simulacrum oversize," Nadine Shah warned. "Fitting a man inside it—hmm! But as to the actual construction, I think that will be quite easy. I'm certain we have sufficient data in store about the physical properties of native tissue, the articulation of joints and the characteristics of their nervous system. Achmed, what about the interface between the machine and Ian himself?"

"No problem there," Achmed answered. "Particularly if he can be hypnotised. We can use microminiaturised sensors with some kind of direct nervous

input, the same as they use on mechanical arms and legs nowadays. I'm sure details of those must be in store in the medical banks."

Ruggiero Bono caught Rorschach's eye. "Valentine, can I ask a question? It may seem trivial, but... Ian, what exactly are you expecting to get out of this gadget? I agree it's a fascinating project and certainly will jar us into thinking about problems that might not otherwise occur to us—but let's face it, a man isn't a Draconian and never can be!"

"You heard in Igor's report that, thanks to Cathy, I discovered how the natives most probably read their printed crystals, manually deforming them to amplify the otherwise very faint patterns. The trouble is this." Ian looked rueful. "Precisely because of the piezo effect structured into them, the simple weight of the overlay at the various sites where we've found libraries has dreadfully distorted what trace-patterns remain. It is in fact amazing that we've managed to find so many well-preserved crystals."

He spread his hands.

"The consequence, of course, is that instead of immediately becoming easier, as I hoped, my job has suddenly proved to be more difficult than it seemed before. And it won't ever stand a hope of getting done unless I can grope my way to an educated guess

about the reason why Dracoenians used these crystals. Cathy has correctly pointed out that it's unlikely they were able to lie to one another—"

"Why not?" Sue Tennant demanded. He gave a summary of the thinking that lay behind the assumption, and she rounded her mouth into an o and leaned back in her chair, convinced.

He went on, "So it's improbable that we have to deal with fiction, isn't it? On the other hand: they had advanced science, so there may be the equivalent of textbooks in the libraries. And they had a keen sense of aesthetics, symmetry, proportion and natural rhythms; a glance at the map of one of their cities will confirm that. So the crystals may well be works of art, counterparts of music or poetry. If that's the case we shall never be able to do more than we can with them already: amplify and display the patterns stored in them.

"There's one ray of hope, though. Stop and think for a moment about the communication-pattern of a creature that's constantly aware of a changing, pulsing, vibrating aura, to which every other member of the species contributes simply by existing. Would their language not depend on referents to real-time events rather than arbitrary symbols like human words? Let me give an example of what I mean. Individual A wants to inquire whether Individual B is

hungry. Does he generate a completely unrelated pattern of signals? I say to someone, 'Would you like something to eat?' There is nothing of the nature of food or hunger in the question, is there? But a Draconian would—at least I suspect he would—ask by imitating the pattern associated with lack of food, and modulate it by imposing other patterns defining 'ask' and direct what he was saying to the correct hearer by reflecting that other person's pattern... as it were."

"They spoke in ideograms," Lucas Wong said, and snapped his fingers.

"Right! Right!" Growing more and more excited, Ian leapt from his chair and began to pace back and forth, frowning terribly. "I haven't managed to work it all out in my mind yet, but the outlines are starting to appear. Just as Chinese writing originally consisted of stylised pictograms, so the Draconian language would have evolved from a number of relatively simple root-concepts most probably associated with bodily states. Naturally, over the centuries it would have grown to be tremendously sophisticated, and the same difficulty that a modern person finds in dissecting the original shape for 'man', or 'house', or 'sun', from a contemporary Chinese symbol will no doubt be found as we try and analyse these imprinted patterns. But we take it for granted that they did get hungry, feel

tired, experience the sexual urge, and so on."

Ruggiero was nodding repeatedly. Now he said, "You've answered my question splendidly, only here's another. Even assuming you do manage to make your educated guess, and it turns out that we actually have—oh, let's be optimistic and say textbooks: how in the world are you going to extract any meaning from them? Trial and error could take from now until doomsday!"

"Not to mention," Achmed put in, "the fact that we now have thousands and thousands of these crystals, but the ones we most want may be the spoiled ones. If the Draconians did leave a message about their fate, in the faint hope that one day someone might come here and read it, they'd have made it conspicuous. Put it on their moon, for example. But we know that up there no crystals were found at all."

"I think they may have been more special than just books," Igor said musingly. He cupped his chin in his upturned hand, staring at the floor.

"How do you mean?" Rorschach said.

"Oh..." Igor waved in exasperation. "More like experience-stores. Think how useful it would be to us if we could go somewhere and hear—perceive directly—read the thoughts of a long-dead genius. That would condense the time needed to climb

from a primitive village to a moonship, wouldn't it?"

For an instant they sat dumbfounded at the grandiosity of the concept; then Achmed pulled a calculator from his pocket, passed his fingers rapidly over its input side, and shook his head.

"Sorry, Igor. The idea's ingenious, but it won't work. The capacity is inadequate by a factor of several thousand. You'd just about manage to store two total personalities in a library of the size we've so far discovered."

"I think you'd be lucky to pack in two," Ian said.

Igor shrugged and sat back. "Pity!" he said with his usual engaging grin. "I thought I'd had a brilliant inspiration."

"In a way you have," Ian admitted. "Given direct experiential communication with other people, and total honesty, plus what we assume to have been extremely high intelligence by our standards... Nadine!"

The comparative biologist glanced at him. "Yes?"

"Those black shreds associated with the telescope, the bio-electronic system as we've decided to call it: are there any similar objects here on the planet itself?"

"Nothing we've been able to identify for sure," Nadine answered. "Which is hardly surprising. The stuff would have rotted or maybe been eaten!"

"Yes, I suppose so," Ian sighed. Igor erupted again. "Eaten!"

Say, you don't suppose that any of the quasi-RNA has been transmitted down to the present, do you? Wasn't there something I once read about printed memory-molecules...?"

"For all we can tell," Nadine said, "we may already have seen direct descendants of the Draconians, never mind descendants of the creatures that ate their organic circuitry. Had that never struck you?"

Igor nodded. "Yes, I remember discussing that idea when I first arrived, on the trip before yours. You're thinking in terms of a harmful dominant mutation which deprived them of the power to reason and communicate?"

"If that were the explanation for their downfall," Lucas said, "after a hundred thousand years of mindless reproduction you'd have to regard the present-day offspring as a different species, surely."

"Agreed," Nadine said. "Still, the fact does stand that there are literally hundreds of surviving animals like enough to the Draconians to be their cousins. That is, assuming the scanty nature of the actual physical remains we've found is a reliable guide, and we haven't inadvertently filled out our picture of them by drawing too many comparisons with the contemporary fauna."

"In any case," Ian said flatly, "I don't see how such a mutation

(con't. on page 116)

Duncan Lunan, whose name is associated with science fact in the news these days, offers a likely scenario for the discovery of and contact with an alien-

DERELICT

DUNCAN LUNAN

Illustrated by JEFF JONES

THE STARSHIP was far, far out in the still heights of the Solar System when first it came to the notice of Earth. On a misty afternoon in early spring the new Jodrell Bank telescope, counting radio sources on the fringe of the unknown Universe, registered as interference the emissions of an ion-drive retrofire beyond the orbit of Saturn.

The papers gave up entire front pages to the Palomar photographs of a faint streak among the twelfth magnitude stars. After that, there were only small paragraphs reporting its steady deceleration, in the news, though the central pages blazed with speculation; until the ship discovered Earth a week after crossing the Martian orbit and shifted its incoming trajectory for the first time. Nearer and nearer to Earth the starship came, until by the autumn of that year the comet-like trail of its drive was plainly visible through binoculars on moonless nights.

By then it was very close to Earth and had slowed to capture velocity. The speculations became increasingly conservative and increasingly dramatic in the last few days before it fell into elliptical orbit and the glow of its motors died away.

The nations equipped to do so had made diligent attempts to establish contact: To all the radio and light beams directed at it there came no response of any kind. As an interesting corollary, the aesthetic standards of radio and television programmes all over the planet had improved out of all recognition by the time the ship could conceivably have been within range. The alien vessel went round and round the Earth, an enigmatic point of light soaring silently among the stars, dipping into the atmosphere for a few seconds to a depth no computer was needed to interpret. Within days, the ship would fall.

From Cape Canaveral a Saturn C-5 lifted in late after-

noon, thundering downrange on a long trail of white vapour. It was a flawless day, and the long outward curve over the sea and the blue haze of atmosphere went without a hitch. The Russians, hampered with a similar mission by the low incidence to the equator of the starship's orbit, had sent observers to the Cape and to Texas to follow the course of the rendezvous. There wasn't a Russian cosmonaut aboard the departing Apollo, but by then international relations had eased to a point where (with some grumbling) ground observers were declared to suffice. The Australian tracking stations confirmed the estimate that in the darkness the capsule had closed to within five miles of the starship. All over the world, silence fell as the two spacecraft floated towards an unpredictable dawn.

In the compact interior of the Apollo, Johnstone rose carefully from his form-fitting couch, checked again that all was well with the life-support umbilicals drifting weightlessly with him, and opened up the hatches. Outside, the Earth was a huge dark wall from which the booming rush of air inside the suit seemed to be echoing. On the other side and above the stars were ice-cold and excruciatingly brilliant. Johnstone tried valiantly to find the alien ship in the night and closed the dark filters over the helmet faceplate when it seemed that his mind was expanding



past the boundaries of his skull. After that the stars were more distant and the immensity was easier to take.

A band of colourless light ran swiftly along the horizon ahead, marking it off in sudden perspective from the space beyond. The capsule's smooth, conical hull came into still nearer relief beyond the hatch and his suit was picked out in molten silver. For a moment everything was tinged a subtle mauve, then from beneath the world came the first explosion of red. In that moment Johnstone saw the ship.

Even after the sun had lifted right out of the atmosphere and the blue dawn had spread past below, the starship was still dull. It looked very, very old as it hung in orbit with the clean, gleaming capsule and the islands of the Pacific went relentlessly past beyond it. It was bigger than a destroyer and not so big as an aircraft carrier; in shape it was a long, slender oval, cut short at the tail where the big ion-drive ports were. At the stern there were four small fins, more probably to radiate heat than for aerodynamic effect; at the prow, the featureless windows of what looked exactly like an airliner's control deck.

"I see no sign of any activity," Johnstone said finally.

Above the rasping of static the voice from Hawaii surged in the earphones. "Apollo. . .do you observe any activity at higher

magnifications?"

"Negative," said Miller, scanning the starship with the capsule periscope. "Man, it looks a million years old."

"Cap Com to Apollo, clarify please."

"The hull is worn down by meteor action. There are quite a number of large impact scars, and even they are blasted down. No external markings from this angle, no major damage. . .just an old, grey hull."

"It can't be dead," Davis said from the control panel. "The engines were still running twenty-four hours ago."

"Yeah, but they pushed it into decaying orbit. We could well have a derelict here."

Miller passed up signal lamps to Johnstone, while Davis renewed the attempt to contact the starship by radio. The Apollo shifted to bring the lights most effectively to bear, and Johnstone ran through a number of preliminary contact codes worked out during the past months. As he worked the lamps the Californian coast passed below or beyond—his orientation changed with his movements. Dusk was beginning to trail westwards across the Americas, smoothing out the contours below the stationary clouds. By the time he was halfway through the sequence the ships had crossed the Atlantic shoreline and darkness was creeping out from beneath the haze on the horizon

ahead. The Sun blazed intolerably just above the edge of the Earth astern, and as it flashed and disappeared the stars came back to their frosty blaze. This time Johnstone kept the dark filters and the white points of fire stayed far away, up over the black rim of the world and distant in the sphere beyond. For a few moments a pale sliver of New Moon floated where the sun had been a minute before, then it too was gone as they curved around the Earth. Johnstone signalled on, and the light beams were invisible from the instant they left the reflectors. But for the pilot lights, he could never have convinced himself in that intense blackness that the lamps were working.

"Radiation count's rising, Daniel," Miller said. "Better come back inside the shielding."

Johnstone had relaxed so completely as he hung in the hatchway that for a moment his legs refused to respond against the stiffness of the suit. He backed slowly and clumsily down into the capsule, bringing the lights with him, while Miller gathered the umbilical out of his path. Reaching up again, he pulled down the hatches and closed the opening before settling carefully on to his couch. He didn't mind being outside in sunlight, but with that absolute stillness in the dark hemisphere between Earth and stars it was like an awakening to come back into the

glowing interior of the Apollo.

"Bermuda Cap Com, we shall not repressurise the capsule. Looks like we'll be outside again as soon as we hit the dawn."

The periscope was still locked on the starship, but nothing at all could be seen. But for the blip on the radar the capsule could have been entirely alone as it curved over the peak of its apogee in the wilds of the Van Allen Belt.

As they prepared cameras for the next pass through daylight Davis reported to the Indian Ocean tracking ship. "We are now less than a mile from the vessel. We could make the final approach at perigee on this pass without additional fuel expenditure. Recommend this action because our consumption so far has been unusually high."

"Roger, Apollo... We would recommend that you close with the ship as soon as possible. Guesses at the mass have been considerable underestimates, and she's coming down fast."

"How long before she hits atmosphere?"

"No accurate prediction without knowing the mass of the ship. Maximum estimate three, repeat three more orbits."

"I guess that's where all our fuel's been going," was Davis' only comment.

Closer the spacecraft came as they came down from apogee and the invisible current of radiation racing in the Earth's magnetic field. The town lights of Aus-

tralia made minute glowing specks floating across the periscope screen. A few of them were eclipsed for a while as the starship passed in front of them. Then, like a ghost, the alien vessel began to materialise as the first light spilled over the horizon. They were very close, now, and as the ship dramatically filled the screen it seemed for a moment that they were crashing headlong into it. In fact the two craft were respectively almost at rest.

"We are now in full sunlight. No visible activity on the starship. Closing in."

The jets of the power module nudged the Apollo closer and still closer to the worn, featureless hull. Johnstone thought of a bird hovering cautiously over the back of a stranded whale—a fossilised brontosaurus might make a still better analogy. Miller, giving a steady commentary to the Cap Com stations, was making no attempt at all to communicate the sense of unbelievable age in the blasted-down surface expanding before them; wisely perhaps, for Johnstone could find no words for it. Davis was bringing the capsule up the spine of the ship, till at last it drifted over the blackened windows of the control cabin. The surfaces were as deeply ground by interstellar dust as the hull itself—nothing at all could be seen. Davis halted the Apollo just ahead of the starship's prow, like a white fin-

less pilot fish.

"Let's put some lights on those windows, Daniel."

Johnstone repeated his deliberate mounting into the hatch and shone a succession of powerful beams into the glazed eyes of the starship. They failed to penetrate—there could be shutters on the inside, for all the effect there was.

"There's still no response anywhere on the radio," Miller announced. The capsule turned over slowly and went under the prow.

"There it is." As the hull passed above his head Johnstone felt like a diver checking a ship for underwater damage. "Airlock door, astern of the control room position."

"Roger, we have it. Moving into position now."

The Apollo came to rest under the airlock and Johnstone eased out of the hatch, pushing the lamps aside and discarding the life-support umbilicals, which Miller drew back into the capsule. Cautiously Johnstone tested the equipment of the shoulder air and power pack, then drifted up towards the starship. Miller came out of the hatch with the same elaborate care and hung waiting for Johnstone's first report before following.

Before the airlock there was an anchoring plate for small craft making rendezvous. It was hard to see because the markers which once made it conspicuous were

worn away to the faintest of shadows, visible only when the light struck at a certain angle, like the carved weapons on the outside of Stonehenge. The external control of the door was still harder to find; he had to make a detailed examination, inch by inch, with help from Miller with the lights to cast changing shadows. When at last he found it, when suddenly its shadow seemed to leap out on the dull metal, it seemed incredible that he could have missed it for a moment.

"I can't move the switch. It's been a big heavy thing, and it's so worn out of shape that I can't get a proper grip. Bring up a wrench."

Annoyingly painstaking, Miller turned over as he crossed the gap and landed feet-first on the starship, killing the rebound with the power pack and handing the instrument to the inverted Johnstone. Slowly, watchful lest unexpected reaction spin him off, Johnstone applied pressure through the head of the complex space tool to the control bar.

"The airlock mechanism may have been dead for centuries," Miller observed.

"It may also have been locked for ten minutes," Davis said from the capsule. "You're taking too much for granted."

"Could be...but if anyone's aboard, he hasn't replaced this external switch for a long, long time. His identifying markers

could use some touching up, too."

Johnstone grasped the anchor plate with one hand and tried again. His body swayed dangerously as he tried to compensate for the leverage.

"Better watch it, man," Miller remarked, drawing back a pace. "You lose your grip, you may crack your helmet on the plating here."

Stiff and heavy, the shapeless bar rose a few inches out of its recess. As it yielded the big airlock door pivoted up with it, forcing Miller to sidestep off the hull. The circular opening revealed was big enough to hold the upper half of the Apollo.

The controls inside the airlock were simple, designed apparently for beings physically close to man. The lock mechanism responded smoothly and within a minute Miller and Johnstone were floating in the inner doorway. The section beyond was almost bare, it seemed, but as they looked around they began to recognise recessed equipment. Miller gave Cap Com an efficient descriptive analysis.

"...this section is planned for gravity acting at right-angles to the ship's axis. Unless they had some way of generating artificial g the ship must have landed like an aircraft. That would put the flight deck above the nose of the ship as we originally supposed, and the outer door of the airlock on the underside, so it must sit at least six feet off the ground. On

the left from where I'm speaking there's a conveyer tube running sternwards, with a pressure door covering this end. There's equipment retracted up to the ceiling which might be a manipulator system to transfer the loads from the tube to the airlock. None of the equipment in here is deployed, it's all recessed or retracted. This section has been very well designed for the best utilisation of the available space..."

"Second report on the airlock support equipment—the remaining equipment in this section relates to the preparation and reception of equipment and personnel. It appears that this section of the hull is fully insulated from the rest of the ship, including an independent pressurising system, for decontamination of incoming units. We have completed photo record and are advancing into the ship."

Through the hatch there was a long corridor, its sides patterned at intervals with intricate mosaics which they eventually decided, after some weightless discussion, to be purely decorative. The lighting was the same brilliant white as it had been in the previous section. Calculating distances, they reported that the tunnel ran along the core of the starship. Looking down the empty, padded tube it was harder than ever to think that the ship might still be manned.

"That has to be the flight

deck," Johnstone said, pointing to the nearby hatch forward. "There isn't room for anything else."

"We'd better separate—time's getting very short. You take the flight deck, I'll go sternwards."

Johnstone swam gently towards the prow, guiding himself by one of the lifelines along the corridor sides. The hatch into the control room opened smoothly before him and after the first cautious look for occupants he moved boldly through, instinctively turning to align himself with the gravitational orientation of the flight deck.

As the ship curved towards the sun on its ion engines, Johnstone had guessed that its technology could not be so very far ahead of Earth's. So far nothing about it had come as a real surprise—it *must* have been constructed by minds and hands like his own. In that case the controls, to be operated under a great range of trying conditions, would be straightforward. Much careful thought had gone into the starship's graceful and economical design; Johnstone felt sure it would be easy to fly, unless the controls were so compact that he couldn't follow the sequences.

The flight deck was on two levels: he faced a row of equipment cabinets, their faces simply marked with more of the alien writing of which they had seen short samples already. On his left a massive spiral ladder led to

the level above. Johnstone moved toward it, and found an access panel into the nose of the ship. Beyond the cabinets, the rest of the lower level was an impressive bank of astrogavigation equipment and machinery which depressed the nose-cone to let the telescopes sight out into space. As Johnstone had suspected they would be, the big star-trackers were linked directly to the control panels above, where the computers or their sub-units should be. There was an operator's chair for the navigation array, but it was folded and locked back against the bulkhead.

The upper level recalled an airliner cockpit still more clearly to mind. Everything about the layout of the ship so far had persuaded Johnstone that its crew had been like men, and the control deck seemed the final confirmation. For Johnstone the deck was more spacious than its terrestrial equivalent, but for the aliens it couldn't have been. The three huge g-couches, molded out of a black plastic, confirmed that the occupants of the couches had indeed been like men in form, but eight or nine feet tall. The impression of relative scale had been strengthening ever since he entered the ship; it was like being a child again in a world of adult artifacts.

The right-hand side of the control deck seemed to relate to the starship's computers. The panels

were all live but quiescent, as if the old ship was waiting for something it had fully prepared for. After finding the flight deck deserted Johnstone was certain that the computers were the only awareness remaining on the vessel. Unless he was interpreting the layout of switches quite wrongly, every part of the ship's control system was on automatic.

The panels on the left were harder to interpret; but it seemed logical that they should govern communications and life-support systems. Parts of these panels, doubtless including the communications sections, were completely dead. Johnstone wondered if the computers were incapable of communicating, if they responded only to recognised signals, or if the receivers were out of action. If the ship's log was missing or defied translation, it should be possible to learn from the records of the life-support system when the aliens had left the ship. How long ago—a thousand years, or a million?

There were no shutters on the view ports over the main panels. They were opaque, blasted by countless specks of meteor dust between the stars until no light penetrated them. How long did it take for that to happen? It occurred to Johnstone that the empty starship might have visited many planetary systems. The navigation equipment, the computers and the engines were still

working—what ancient orders had carried the ship from star to star until finally it chose Earth? Perhaps it had even settled on other worlds, searching without success for life and intelligence and lifting patiently back into space again.

Johnstone settled carefully into the massive g-couch to study the main control panels, trying to imagine himself as a giant with all the operations of the starship at his command. With the aliens' talent for elegant design, how would he have the controls ordered? As he considered, the characteristic functional beauty of the travellers' thinking began to emerge from the patterns of switches and instruments before him. In technique the ship might be a thousand years ahead of Earth, but its principles were already familiar. It would accelerate man's progress in space more immediately than something truly—and incomprehensibly—alien would have done.

The attitude control system was the first he picked out. It was still operating; as the ship circled the Earth it was holding attitude in readiness to stabilise the orbit. If it was going to restart the engines it had better do it soon, for as the continents and seas rolled past below the final searing slant into the atmosphere was drawing swiftly closer. The big throttles which controlled the potential of the ion motors were easy to identify at his right hand, with coun-

terparts on the other arm of the couch regulating the flow of reaction mass. Tracing back the control system, Johnstone found it beginning to make sense despite the unfamiliar calibrations of the instruments and the few controls which were completely puzzling. He realised that the computers had the engines primed for low-power thrust; he had only to throw the override switches on the "engine start" row to turn the drive back on.

Johnstone had been alternating his reports with Miller's accounts of his exploration of the sternward sections of the ship. From Miller's reports of the living quarters and workshops, the laboratories and the recreation rooms, there emerged an ever clearer image of the tall owners of the ship as they had gone about their duties and their relaxation, working, eating, making love, sleeping, thinking and exercising in the practical but aesthetically pleasing crew sections of the starship. Who had they been? Miller had found holds and storage sections, but none seemed big enough to make the vessel a trader or even a supply ship. Yet it couldn't have carried more than a hundred people, so it seemed far too small for a passenger service across the interstellar distances. Even if the ion-drive was near the theoretical limits of efficiency it must have taken years to move from one star to the next. There were no

weapons of any kind, nor any other indication that the ship had a military function. On the other hand it seemed unlikely that the purposeful minds who had designed it would have built the ship purely as a pleasure cruiser. Perhaps a research vessel was the most convincing explanation. For how many years had the crew contracted to go exploring among the stars—and did they ever get home? Miller had found no bodies, nor any work unfinished, any equipment left deployed after use. Unlike the crew of the *Marie Celeste* the starship's personnel had set their affairs very thoroughly in order before they left, and it seemed they had taken their personal belongings with them. There was no damage to justify abandoning ship. Perhaps they had simply transferred to another ship, leaving this one because fuel stocks were too low to reach civilisation. But why then had the computer taken the ship out into interstellar space once more, instead of waiting where it might eventually be recovered?

Moving sternwards, Miller had been stopped amidships by bulkheads and shielding cutting off the ship's power unit. As yet there was no indication of the nature of the source which had maintained its output for so long. There were hatches in the shielding, leading probably to a separate engine room, but Miller had failed to open them. "I think I've

told the computer we're here," he reported. "If I got it right the automatic lock just asked for my identification."

"I think we can take the ship back from the computer," Johnstone said. "It looks as if it would be real easy to restart and push her into stable orbit."

"I'm on my way up. How long have we got?"

"You have less than two orbits," Davis put in from outside. "We are now coming up to apogee again. And talking about shielding—does that hull have any?"

Johnstone unhooked the dosimeter strip from the front of his suit and checked it. "I haven't picked up anything so far. Besides this is too important to leave now. We won't need to go through the Belt more than twice in any case."

Miller followed Johnstone's tracing of the control sequence with great attention. With two of them in the cockpit the pressure suits became an encumbrance again, the weightless ease of movement was gone.

"Just throw those little switches, and away we go?"

"As far as I can see."

Miller stepped back. "Light the torch, then."

Johnstone settled again into the g-couch. How long, how much of the whole span of human history, had it been since anyone sat here last and took control of the ship? He had to stretch forward

to reach the switches for which the last pilot would merely have raised his hand. As he threw them one by one the control panel responded in what seemed to be an orderly overall pattern.

"You did it," Davis announced. "The drive is running."

"Keep well clear of it, it could fry you."

"I won't have any trouble staying with you. You haven't even begun to move with respect to me."

Miller looked around the glowing panels. "Tell me one thing, Daniel. Why didn't the computers stabilise the orbit themselves?"

"I don't know. This ship's built for high speed in atmosphere—it would come down at n times the speed of sound even if it survived entry..."

"But look, how does it get down normally? It must have some kind of atmosphere manoeuvring system. Maybe we should leave it to find its own way down."

"But if we do it may burn up—if it wanted to go down why didn't it retro from stable orbit? Let's face it, if we were trying to get down safely from space we wouldn't use a decaying orbit!"

"It's relatively unpredictable. But perhaps the ship's slowed down to within its re-entry tolerances and it doesn't care where it comes down. It doesn't know Earth's inhabited, if you're right about those dead panels relating to communications—"

"At the moment, it's coming down in the Pacific!"

"Perhaps it had a retrofire or an acceleration in mind. Or perhaps it doesn't care where it lands any more."

"So are you saying we shouldn't try to save it?"

"No, man. But I don't think we will save it, so I'm not getting emotional about it like you are."

After that there seemed to be little more to say. The ship remained steady, and Miller left to continue his exploration of the sternward sections. The ion-drive was putting no noticeable g on the ship, and Johnstone listened to Miller's regular reports as he floated down the corridor to hatches as yet unopened. Left alone, Johnstone worried over why the computer had set up the ship for stabilising the orbit and failed to carry out the manoeuvre. Perhaps the ancient decision circuits had failed, or the collapse of the last of many back-up systems had left the machine impotent to carry out some of its intended actions. But there was another possible explanation, one that Johnstone came increasingly to suspect as he compared notes with Davis on the power manoeuvres the Apollo was making to stay alongside. When they went over the Indian Ocean tracking ship toward the end of the next orbit, the suspicion was confirmed. At that low-thrust setting the ion-drive would make no significant difference to the

starship's orbit before it hit atmosphere for the last time.

"At this thrust it wouldn't have made stable orbit supposing the motors had never cut off," Johnstone told Miller when the astronaut rejoined him.

"That was why the computer shut them down," Miller said shortly. "It knew it couldn't pull out, so it conserved power."

"But why not step up the thrust?"

"There may not be enough power left—or the engines may be dying of metal fatigue. But if you want to try do it now, because we've got about twenty minutes left and if she can't pull out we must get back to the capsule."

The alien voyager would have been able to open both sets of throttles without any movement beyond the wrists, but Johnstone had to lean forward and spread his arms to reach them together. The control panel responded violently. The computers were doubtless protesting furiously, though their warnings meant nothing to Johnstone and Miller. Behind them thick radiation screens deployed, closing across the bulkhead and sealing off the control room.

"Boost your shielding, George!" Miller said to Davis, dropping into a g-couch as the acceleration began. "It looks from in here as if we're stirring up some radiation."

"You're spraying it amidships like a wake! I'm moving out

ahead of you to get some protection from your internal shielding. You're beginning to move now... Hope my fuel holds out!"

"Stay with us, man, we may need you in a real hurry."

"The exhausts are really spectacular now, a huge luminous plume—it looks like you're going interstellar!"

"All the way!"

"Go, starship, go!" the distorted voice of Woomera put in.

The control panels had settled again, but flashing lights above many of the instruments made it clear that the ship was under strain. It wouldn't matter if they damaged it as long as they got the ship into stable orbit; if it fell into the Pacific there would be little left to study.

A burning arrow in the dawn sky, the starship crossed the Australian coast. "You're losing a lot of thrust," Davis reported. "The containing field is weakening—the ion beams are becoming ragged."

"We can't do anything about that. I think the computer's trying to tell us we're putting too big a demand on the power plant."

"I don't know what the normal operating temperature is, but the motors are running red hot."

"Better get ready to move fast, Daniel..."

"White hot... Cut-off! Cut the motors!"

The boiling control panel settled back into comparative quiet. New banks of instruments had

now identified themselves: on the drive sections of the board the damage lights glowed insistently.

"That does it, friends. You had quite a good meteor shower going for a while there—big splashes of incandescent metal shooting off in the ion beam. The motor throats are completely burned out."

Miller was off the couch. "Let's go, Daniel. If that shielding wants identification before it lets us through we're in *real* trouble!"

Reluctantly Johnstone left the g-couch and made for the rear of the flight deck. At the top of the ladder he looked back at the big, empty couches and the accusing glare of the lights on the control panels. "If it had come fifteen years sooner," he said aloud, "we'd never have known about it. Fifteen years later we probably could have saved it."

"Let's go, man." Miller had opened the side hatch into the tunnel, which was unblocked by shielding. They pulled themselves swiftly down to the next hatch, and through into the airlock section.

The Apollo was back alongside as they emerged, with five minutes to go before the re-entry. Miller made straight for the capsule, but Johnstone felt compelled to turn aside and try to close the outer door.

"Come on, Daniel! We've still to get clear and trim for re-entry..."

Johnstone made no reply. With the help of the suit jet he succeeded in thrusting down the worn bar and the big door swung down. As he crossed to the capsule Miller was extracting the film magazines and hurling the cameras out through the hatch, along with the lights and the other equipment there was no time to stow properly. By the time he was strapped into the couch the Apollo was well clear of the starship and separating from the power module. They made it into re-entry attitude with less than a minute to spare.

As soon as the hot capsule dropped out of the punishing g's of re-entry and the drogue chute was out Miller deployed the periscope and began to search for the impact. But the old computer had still a card to play: the ship was almost directly below them, slowing down on atmosphere jets as it dropped on an even keel towards the sunlit Pacific.

"Hey, look at that! We may not lose her yet!"

The drogue chute separated and the Rogallo wing deployed. By the time the capsule was settled into a steady glide the ship was thousands of feet below them, but as soon as they picked it up they could see it was in trouble.

"One of the atmosphere jets has burned out," Miller reported to Hawaii. "The starship is trailing smoke as it goes down, and there are pieces of burning debris

(con't. on page 96)

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Sandy Meschkow is an amiable young man perhaps best-known to East Coast sf convention attendees as one of the principles in the annual (early November) Philadelphia Science Fiction Conference. This story marks his first sale as an author of science fiction, as his protagonist explores the results of—

LOCAL CONTROL

SANDY MESCHKOW

Illustrated by JOHN T. SWANSON II

SIMON KIRBY CLIMBED STIFFLY out of the public aircar and looked at the parking pad around him with suspicion. Somehow, this place didn't look like Lincoln, Maine, either. From his uncle's tapes and pictures he had expected Lincoln to have a bigger transport terminal. But then, the Lincoln he had been in a few hours ago had had a terminal of the right size but had been such a witches' brew of legalized anachronisms that a licensed astronautical engineer of his uncle's caliber couldn't have afforded the technology tax. And his uncle would never have dreamed of driving a horse and buggy.

Simon left the parking area and crossed the concourse. As he found himself approaching an exit gate for the fourth time that afternoon, he couldn't help feeling angry at himself. Leaving the Columbia enclave on his own to pay a surprise visit

to his uncle had turned out to be a bad idea. Nobody had ever warned him that it would be the little things that would trip him up. Carter City, Mars, had a large, complex life-system, so he had been somewhat prepared for the sights and smells of Earth. After man-years of centrifuge exercise Earth gravity was no problem. And any child could operate a public aircar autopilot. But, trash it, reading years of microflake editions of *Time* and *Playboy* had never quite prepared him for the reality of dozens of different places in the United States with the same place names and different trip codes. On Mars, Carter City was Carter City and Niven's Landing was Niven's Landing. But having two dozen Class Four Urban Areas named Lincoln in the aircar directory computer was sheer insanity! Now, after having shuttled back and forth across several time zones (and the

Sierras), he was starting to wish he had asked his uncle for better directions in the first place.

It never occurred to Simon to give up, fly back to Morningside Heights, and spend the rest of his intersession vacation in Manhattan. Simon wasn't unintelligent or lacking in common sense; he was merely stubborn. He would never have gotten to Earth if he had not been stubborn. He had been sent to Earth to learn. He was doing something wrong. Sooner or later he would learn how to do it right if he kept trying.

He stopped in front of the enclave code display just inside the exit gate and looked up at the bewildering array of colored abbreviations and symbols. Then he pawed wildly for his *Federal Guide to U. S. Enclaves* and began to flip frantically through the color charts. "No, no, no!" he cried. "This still isn't the right place!" He fought the wild urge to tear his *Federal Guide* to shreds.

"Hail Columbia, Citizen," said a silky voice at his elbow. "May I assist you?" He turned to see a tall, blonde girl in the rainbow uniform of the Enclave Relations Service. She had amber eyes with golden flecks in them. None of the twenty girls he had grown up with—or their mothers—had eyes remotely like that. How astounding.



"Why, uh, yes. Hail Columbia, Citizeness." He took a deep breath and regained his composure. How to approach this without sounding like a lost lamb? "Is this a Class Four Urban Area named Lincoln?"

"Why, yes."

"Good. Is this *the* Lincoln with the social code starting with tee-ate-eee-hyphen-are-seven-asterisk-slash-three-three-nine?" Hah. Now that he had the code so well memorized that he could rattle right through it he really sounded like he knew what he was doing.

She cocked her head the way puppy dogs did in pictures. "Tee-ate-eee-what? Just a minute, Citizen. Are you seriously trying to locate an enclave address through its social code? Are you a foreigner?"

Well, he had blown it. "Yes, in a manner of speaking. I'm from Carter City, Mars."

"Mars? Co-Lumbia!" Her eyes grew big and round. "Oh, you must be one of the First Generation. I saw you all getting interviewed on Federal television with the President." She took him by the arm and steered him towards a nearby bench. "Here. Don't waste your strength fighting gravity. Well, no wonder you're confused. Nobody ever told you that you can't go from a social code to an enclave address because the wibble wibble index won't give wabba wabba access."

"What?" Besides using enor-

mous amounts of slang and technical jargon he didn't know, everybody on Earth talked too fast. Also, the perfume or whatever it was she was wearing made the hair on the back of his neck stand on end. He was getting pretty tired of being needlessly forced to sit down by helpful doctors, talk show hosts, government officials, and nice ladies. But with those incredible eyes only inches from his, he sat.

"I'm Second Assistant Anderson," she said. "Now give that address and your *Federal Guide* and I'll get you turned in the right direction. Nobody but an enclave specialist ever uses the codes, you know. All the average Citizen ever cares about is what the codes mean to them personally. Let's see. You seem to be looking for a Class Four Urban Area named Lincoln where heterosexuality, exclusive group marriage, Title II drugs, corporate monopolies, and female heterosexual prostitution is legal. Seven-asterisk means what? You know, they just revised this code system at the Second Denver Congress. Had to re-wibble the whole security matrix. You'd be amazed at the amazing accidents people kept having for weeks."

"I can imagine," said Simon. His head buzzed. Maybe the gravity was getting to him.

"Got it. Now, Title I drugs, American Communism, male and female bisexuality, nudity,

and racial discrimination are legal-if-taxed. An-n-n-n-d alcohol, MJ, H, Title III drugs, mercy killings, and organized religions are Level One crimes. Well, you can give me the rest of the code if you want to, but our Lincoln Township here is nothing like this."

"Lincoln Township. Lincoln Township." Simon said the words as if they tasted funny. "Great flaming balls of garbage. I remembered counties and parishes and boroughs, but I forgot townships. I may have been punching trip codes for named locations like cities and named *areas* like townships interchangeably."

"Perhaps you were," she said gently. "Didn't you ask an Enclave Serviceman for help?"

"No. I just asked other travelers. The first place I landed was an Amafro enclave. Everybody spit at me when I tried to ask directions. The second place was an Anachronist enclave. I guess some of them still watch Federal TV on the sly, because the women in sunbonnets hustled their children away from me and the men called me a Godless technist. Then a man dressed like Ivanhoe came over and—" His jaw dropped. "Why, that trashbrain. He came over pretending to help me and deliberately gave me a wrong trip code in California".

"Where did he send you?"

"A Gemini Fraternity newtown. One of the Brothers recognized me. They offered me the

key to the city and they were going to anoint me with precious oils and, uh, make me their first Martian Brother. I had to take off in a thunderstorm." He closed his eyes and swallowed hard. "Up to then I had only seen thunderstorms in hold horror tapes. Now I know why they put them there."

She giggled. "The thunderstorm business is funny. The other isn't. How long did it take for you to talk your way out of there?"

"Well, they really didn't give me much of a chance to. I more or less had to fight my way out."

Her eyes narrowed. "Fight your way out? Be serious. Didn't you run into any Argonauts at the terminal gate?"

"If you mean those big blondes with the anchor tattoos on their arms, yes. They have a very showy but slow combat style. Maybe they should train in a centrifuge the way I did."

"Wabble," she said under her breath. She looked him up and down. "You mean you've been trained in unarmed combat to the point you can fight Argonauts and *win*? Why, you aren't even wearing your self defense license."

"None of the Department of Astronautics people ever told me I needed one. Besides, what's wrong with unarmed combat training? On Earth people get robbed and kidnapped and, and mobbed by autograph seekers. You have to be able to cope."

"Winning fights with Ar-

gonauts goes beyond coping! Never mind. You've been committing personal misrepresentation and that's a Level Three crime in most enclaves and in Federal territory. By rights I should turn you over to Terminal Security."

"You must be joking."

"No, I'm not. It's for your own protection. Look, the Fraternity won't press charges on a Federal level because we could hang them on the "freely consenting" clause. Besides, they would be laughed at if the word got out. But you know what would have happened to you if you had killed someone in that Anachronist enclave? They still *hang* people in there."

"Garbage. I give up. For today, anyway. Citizeness, which way to the jail?"

"Wait a minute. I only said 'by rights.' There are two other things you could do. You could get a room in the terminal hostel, lock yourself in alone, and register yourself at the terminal Federal Services office as soon as it opens in the morning. Or, you could put yourself into Citizen's Custody and come on home with me when my shift ends."

"Where do you live?"

She pointed out of the exit gate. "Just a few miles from here."

He shook his head. "Citizeness, call that guard!"

"Go into custody?" She looked incredulous. "You'll be sleeping

in a cell tonight and they'll fly in three Federal judge advocates and hold a trial in the morning!"

"And I won't be here. Look, I can make five phone calls in five minutes and fill this terminal with lawyers, newsmen, security guards, and Burroughs knows who else. Do you know how many emergency phone codes I know? There's the Secret Service, Federal Criminal Intelligence Agency, Department of Astronautics, the Teamster outfit that has the Columbia Student Enclave security contract, and maybe two or three more. So I can count on getting freed by somebody in the morning. But I plan to sleep in custody tonight where I won't be shot at, raped, drugged, or spat at because I am wearing a wristwatch. No thunderstorms in here, either. It's just about ideal."

"You'll never learn what Lincoln Township is like in here," she said.

"What could I be missing? No, don't tell me. Let me guess. Sexual relations between consenting animals is illegal. Dogs can vote. Eating chocolate is a Level Two crime. The only untaxed religion is Thor worship. On Midsummer Eve you all paint yourselves green and bay at the moon. Have I left out anything?"

"Yes," she said, with a perfectly straight face. "If you're caught eating peach iced cream with a girl on a roller coaster they make you marry her."

For a moment he just goggled at her. Then they both collapsed against each other in helpless laughter. A traveler in a nearby phone booth, who was hooded, armored, and carrying enough weaponry to fight a small war glared at them as if they were insane. Weaklings!

"I guess I had that coming," he said, wiping tears from his eyes. "I didn't mean to make fun of your enclave's system."

"You're excused. You've had a hard day passing through some hard enclaves. After today Lincoln is going to be a relief."

"What's your system like?"

"It's an answer to what's wrong with all the other enclaves. Did you ever learn what Lincoln said about fooling people?"

"Something like 'You can fool all of the people some of the time and, uh, some of the people all of the time, but you can't fool all of the people all of the time.'"

"Our version is different. You can make people obey all of the laws some of the time and some of the laws all of the time, but you can't make them obey all of the laws all of the time."

Simon thought for a moment. "That makes sense. That's why there are enclaves and local control. All the people who agree live together. Anyone who doesn't agree is free to find another enclave or get together with enough people who agree with him to start a new one."

"Until you end up with en-

claves full of fanatics and an Enclave Relations Service that grows bigger every day. Look what almost happened to you today. Whatever became of 'with malice toward none, with charity for all'? How much charity did you receive today?"

"And your enclave has the solution?"

"Of course. When your people won't obey all of the laws all of the time, don't run them out of your enclave. Maybe some of them are right. Try changing your laws a little and see."

"Change your laws? That's anarchy. They used to have it under the Old Constitution and it didn't work."

"No, that's not anarchy, that's tolerance. We have it in Lincoln Township and it works. Come see." She smiled at him and her face crinkled up in a way that was absolutely unique to him. Trash it, he could visit his uncle any time.

"That calls for an introduction, Citizeness. I'm Simon John Carter Kirby, and I deliver myself into Citizen's Custody."

"I'm Beta Anderson, Simon, and I accept custody of your person until you can be delivered to a duly constituted authority."

"Okay. I'll go home with you on three conditions. No mobs, no violence, and no precious oils."

She laughed. "No problem. All three are illegal in Lincoln. Peach iced cream, on the other hand, is another story."

—SANFORD ZANE MESCHKOW

FOUND IN SPACE

Winner of both the Hypothetical and Nebulous Awards, R. Monroe Weems is a dedicated, life-long scholar of the works of Robert A. Heinlein, to whom he dedicates with affection this story . . .

R. MONROE WEEMS

Illustrated by JOE STATON

ONCE UPON A TIME, there was a community of giant mutant chipmunks, furry and blue, living in an abandoned basement in a great spaceship lost between the stars. One day, without any explanation that they could think of, they found a human baby in their midst. Pinned to his diaper was a note that said: "Cheep-cheep 3:16—'The wider world awaits,'" which was a quotation from the sacred scriptures in which they no longer believed.

They marveled at this miracle. For as they used to say to each other, giving the main bulkhead a rap with their furry knuckles: "What could be more solid? We know what we know."

However, they were generous folk and more than a little afraid of this infant creature they could not understand with his absurd message, so they determined to raise the misfit foundling as one of their own, and never to tell him how ugly he was. They named him Francis X. Cheep-cheep,

after the evangelist, and they put him in the good hands of a sweet old mom and dad who raised him as though he were one of their own litter. His legacy was lost, thrown into the nearest waste-paper basket.

Frank was given the best education his society had to offer. He was taken on field trips to the ends of the universe. He was made acquainted with all the dimensions of the world. He was a bright and able lad, and he prospered.

Oh, he had the usual troubles in growing up. He yearned for his mom and resented his dad, who was a bit heavy-handed. And once he fought with younger Meeper Blue, who told him he was adopted. But boys will be boys, his bites soon healed, as did Meeper's, and they were friends thereafter. Once he called nasty old Mrs. Snidely names and had to be punished. And finally there was the period when he had his problems in confronting his father

and leaving home.

But when he did grow up, he rose to the top. He invented a mechanical currycomb. He invented a superior new waste-disposal system that *blooped* junk, trash and other crap into nowhere in particular. He invented other machines and made millions. On the side, he was a mean fighter, a cool jiver, a sweet singer, and a bad bad dude. But in his success, he remembered his friends like Meeper Blue, and he paid honor to his mom and his dad.

But with all this success, money and fame, Francis X. Cheep-cheep wasn't happy. He ought to have been. Everyone told him that if *they* had what *he* had, *they'd* be happy.

But he wasn't. He kept feeling that there was something else he ought to be doing, if only he could remember what it was. He felt threatened by nameless terrors. He slept badly. That doesn't sound like much, but it was awful. Every time he started to feel good, really good, along would come a nameless terror and wipe him out.

Part of it was that there was nothing left to do, nothing that was worth doing. Life was as confining as a goldfish bowl. He looked around him at his society and it seemed a shuck. Anything anybody else could do, he could do, and he knew it. Life seemed pointless, a cosmic joke.

"There has to be more than this, beyond this limited horizon,"



he said. "If life has any meaning—and if it doesn't, why live?—there has to be more to it than this."

But he looked around him and there was nothing more. After all, *rap rap*, what could be more solid?

He let his mind wander in search of an answer, but the places his mind wandered were bad places, and in those bad places he found only more nameless terrors. Wow, bad!—stuff like falling through space forever and ever, never fetching up against a bulkhead.

Something had to give way. The situation was intolerable. And one day, something did give way.

Frank was visiting his dear old mom and dad, and he happened to look in a mirror. He looked in the mirror. He looked at mom and dad. He looked back into the mirror again.

Something was clearly wrong.

"Aargh," he cried, leaped upon his dad and bit him severely on the thigh. It was something he had always longed to do.

They came and took him away to an institution for bewildered chipmunks like himself so that he could do no one harm until he recovered his senses. Meeper Blue was his doctor. They felt an important person like Francis X. Cheep-cheep would feel more comfortable in the capable hands of someone he knew.

"I see through it all now," Frank said. "None of this is real

but me. You can end the sequence at any time. Wrap it up and put a ribbon around it and put it in the disposal! None of this is real. None of this is reasonable."

"Hmm . . ." said Dr. Meeper Blue, in a serious and professional way. "Why do you say that, Frank?"

Frank leaped up and flicked on the water tap next to the disposal system. "Is *this* reasonable?" he asked. "Why should water spring forth out of the wall at a touch? It isn't natural."

Meeper noted his words, wrote them down, read them over, and then nodded to himself. Then he looked up at Frank.

"Why not?" he asked judiciously. "Water has always come out of a tap, just like that. Why should it be any different now just because you aren't feeling yourself?"

Frank snorted. "I knew you'd say that. It's *plausible*, and you want me to believe in plausibility. But I won't. I refuse to believe in plausibility any longer. It violates common sense."

"Hmm . . ." said Meeper, and noted it all down.

"Or how about this? All around me I see this elaborate facade—bulkheads, schools, nuts, currycombs, chipmunks. What is it for? What is life for? All I can see is chipmunks working to live, living to work, working to live, living to work, ad infinitum. That's pointless ninnygaggle."

"Shucks, Frank. I have bad

days when it looks like that to me, too. You're going to die someday. Get fun out of life while you can. You'll feel a lot better when you go back to work."

"You'd better be careful how you talk to me, or I'll bite you on the thigh, too!"

"Sorry, Frank."

"You're just saying that, but you don't mean it. I can tell. I know the truth now. All this spigglemorphing nonsense exists for just one reason. To keep me distracted so I won't be able to remember. But the truth is that *I'm not like you!*"

At these words, Meeper Blue averted his eyes.

"Yes. Ha. Gotcha. You're more or less real. You're one of *them*. Most of you aren't even that much. I know that now. Empty counters, automatons, automatic pieces, zombies. But you, you were assigned to me at the outset to see that I didn't remember."

"It isn't that way, Frank. Really. It isn't that way at all."

"That's what you say," Frank scored triumphantly.

Meeper sighed and set down his notebook.

"Now, Frank, it is true that you are ugly, and we've all done our best not to rub it in. But it's natural. I mean, you were adopted. But you can be helped. New surgical techniques have been developed since you were young. If it bothers you so much—and we've all gotten used to it—we'll fix you up. Heaven

knows, you're rich enough. You should be happy... And you can afford this kind of work if anyone can."

"Your sweet old mom and dad have signed the papers. We weren't going to tell you. We were going to let the fur and tail transplants be a surprise. But probably it's better that you should know now."

Frank looked at Meeper Blue and chittered in wonderment. He was two feet taller than Meeper or any other chipmunk. He was furless (except for lank drapings on his head and fuzzy patches elsewhere). He had no tail. He wasn't blue.

There was an unbridgeable gulf between them. How had he accepted it for so long? How had he ever accepted it?

They had told him that he was like them. They had seemed not to notice how ugly he was. They... And he had craved popularity and social acceptance.

He had been a fool. He felt like a stranger alone in a strange land.

Frank said: "You mean you aren't going to dismantle the sequence."

"No, Frank."

"But I've seen through you now."

"No, Frank."

Dr. Meeper Blue stood. "I think that's enough for now. We're making real progress, Frank. Real progress. We'll see how things look to you after the operation. I think we'll have you

out of here in no time at all. The nurse will be here in a few minutes, swinging her bushy little tail behind her, to give you your shot. You'll like her. She a real—*chtt, chtt*—sweetiepie."

He winked. "And when you wake, you won't be ugly anymore."

Meeper went out of the room. Frank didn't bother to say good-bye.

Instead, he occupied himself with his thoughts. The prime datum of existence was himself, Francis X. Cheep-cheep. He was sure of that. They had told him clumsy lies, that he had but a few short years of life behind him, a few short years to anticipate. But that was wrong, and he knew it. This space of time was but a tiny phase in his experience. He was sure of his continuity.

"I'm not going to die. I may be a closed curve, but closed or open, I neither have a beginning nor an end," he said aloud to himself. "That for you, Meeper Blue."

But the prospect of the operations frightened him. What if they made him forget? What if he had to start all over again to work out the truth?

There was a discreet tap at the door.

"Yoo-hoo, Mr. Cheep-cheep," came the voice of a real sweetiepie. "Are you decent?"

He heard the words as "you who?" and they struck him to the heart. He was galvanized

into action.

"I am Francis X. Cheep-cheep," he said. "And I will not forget!"

He crossed the room in a bound, fed himself into the disposal system of his own invention, pressed the handle, and blooped elsewhere. It gave him great joy to do it.

He landed on a great pile of crap, trash, and other miscellaneous junk. As he strove to get his bearings, a nutshell materialized in the air above him, plinked him sharply on the noggin, and bounced away down the slope.

He followed its progress with his eye. He was in the largest room he had ever seen, spherical, well-lit, fully two hundred feet across. The surface of the sphere was frosted gold. Through the center of the sphere ran a roadway of metal latticework. At the very heart of the sphere, a band of something encircled the roadway.

The heap of trash he sat upon rested on the roadway not far from the central ring—that part of the trash that had not spilled over and fallen far far to the surface of the sphere below. The nutshell fell down down down to join the garbage below. It was the greatest unbroken distance he had ever seen, and it made him giddy to look.

And it was then that Frank realized an incredible fact. He had traveled *outside the*

universe—and he still lived!

He brimmed over. He nearly fainted.

But there was something somehow familiar, elusively familiar, about this place. He scrambled down the slope of trash as carefully as possible, sending only a few small avalanches of this and that careening over the edge and down onto the surface of the golden globe below. At last he reached the roadway.

He was drawn to the central ring around the roadway. The frame of the ring was some transparent material. A variety of dials and gauges were inset into the framework so that they might be read by one standing on the roadway. And in front of Frank's eyes there was a red button asking to be pressed.

Insisting to be pressed.

Demanding to be pressed.

He had to press it. He could not help himself. He must. He must. He was governed by irresistible impulse.

He pressed the button.

Instantly, the light around him failed. The surface of the golden globe became transparent (except where the pile of trash, junk and random crap rested).

Frank saw the larger universe outside the ship!

He hung alone in nothingness. He was surrounded by deepness.

He saw the stars! (Except

where the garbage impeded the view.)

It was too much. It was much too much!

This vision was one of those nameless terrors that had haunted him all his life. It had been terrifying in dreams, and it was terrifying now.

He screamed and stabbed at the button to turn the vision off.

He fell to his knees and cried with the agony of it all. He grokked wrongness.

Then he heard a sigh. Not his own sigh, but a sigh like the tolling of a bell.

"Garbage," a voice said. "Garbage all over my frosted golden globe. That will really be a mess to clean up. You really screwed up this time, didn't you? Garbage isn't what the machine is for."

Frank looked up, but the radiant glory of the figure standing before him was too much for him and he had to look away again. He felt stabbed with the sharp knife of emotions that were too powerful for him, emotions he was no more fitted to experience than a clam to play a tuba. Waves of weariness, tragedy and grief swept over him like a shit-storm.

With eyes averted, he said, "W-who are you?"

"R. Monroe Weems. Who are you?"

"I'm Francis X. Cheep-

cheep."

"Wrong," said the great glorious personage. "You've forgotten yourself again. You are not Francis X. Cheep-cheep."

"But it's all I know. It's the one thing I'm certain of."

The figure sighed once more, a sigh that rang in the ears of Francis X. Cheep-cheep like the sound of doom.

"You haven't done what you were assigned to do. You are supposed to use the machine to lead those chipmunks out of that blasted basement they huddle in and show them the stars. Not for a *garbage disposal*. Not just to pop about by yourself like a silly tourist. You have a job to do and you still haven't done it. Will you ever learn?

"Well, you'll just have to go

Derelict (con't. from page 82)

trailing behind her. I do not estimate that the ship will slow enough for a soft landing before it reaches the surface."

"Meteor damage to the nozzles," murmured Davis.

"Very probably."

For a long silent minute the oval silhouette of the starship dwindled below the tacking Apollo, a thin trail of smoke hanging behind it against the brilliant blue sea. Suddenly the water creamed below it as the jets hit the surface. The shadow rushed across the face of the sea to join the silhouette and a great fountain of spray leaped up as

all the way back to the beginning one more time and try to do it over. My boy, you *know* you have a great future in front of you if you can only forget this Francis X. Cheep-cheep nonsense and *remember* yourself!"

A great future.

A great future!

So Francis X. Cheep-cheep had his answer. He was a closed curve.

But a lot of good it did him to know it.

When the chipmunks found the baby boy in their midst, there was a note pinned to his diaper.

It said:

"Cheep-cheep 3:16—'The wider world awaits.' (Save this note for future reference.)"

—R. MONROE WEEMS

they disappeared.

"Man, she's gone," said Miller to Hawaii. "She's solid gone."

The underwater technologists would be here within a day, and probably there would be expeditions searching until the fall of the ship had passed into legend. But looking at the unbroken expanse of water stretching away to the horizon, Johnstone guessed that as it descended from the luminous surface towards the silence and the darkness below, the starship's millions of years of history were within minutes of their end.

—DUNCAN LUNAN

AMAZING

Associate editor Carrington is back with a short and pointed tale which asks the question—

AFTER YOU'VE STOOD ON THE LOG AT THE CENTER OF THE UNIVERSE, WHAT IS THERE LEFT TO DO?

GRANT CARRINGTON

HERE USED TO BE a log in the center of the pond on my father's farm. It wasn't really a log; it was a thick branch coming off the main trunk of a submerged tree. Someone had sawed it off where it broke water, and it was thick enough to use as a mooring place for the rowboat. But it wasn't strong enough to hold even a ten-year-old boy without giving a little. So naturally we all had to try to stand on it. I was the only one who ever succeeded. It wasn't easy standing on that log while it sank lower and lower into the water and weaved from side to side while you flailed your arms to keep your balance.

Legions of farmboys may have succeeded before I did, but, if they did, I didn't know it. I was the first in *my* world to have balanced himself on that log. And the last, for it wasn't long after I'd done it that the ship came.

Tommy Peters, my best friend, his dog Rajah, and I were just

sort of sitting by the pond trying to decide what to do with the rest of the day. We had discussed fishing, swimming, going into town on our bikes to get a soda and look at all the things we couldn't afford, playing ball, but really we were pretty happy just to sit by the edge of the pond, making dragons out of the clouds.

I think Tommy really wanted to go swimming, so he could be the second one to stand on the log, but I wanted to savor my position as the only log-climber around for as long as possible, so I kept putting it off.

"Wow! Look at that jet!" he said, pointing to a dot of blackness that was rapidly growing.

"Geez, it's really moving," I said.

"I think it's out of control!" Tommy shouted. "It looks like it's going to crash!"

We scrambled to our feet.

"Holy Crow!" Tommy said in a loud whisper.

It wasn't a jet plane at all. By now we could see it and it seemed like it was coming right toward us. Rajah started to whimper and cringe against Tommy just before we could hear the loud, high-pitched whistle of rushing air.

"It's a spaceship!" Tommy said.

We were rooted to the spot, unable to run, watching that silvery capsule race toward us. Then, about twenty feet overhead, it came to a sudden impossible dead stop and drifted slowly to rest a foot above the water. A door opened, and a guy who looked just like an astronaut in a spacesuit stepped out, walked over to the log, said something loudly in a foreign language, waved to the spaceship, and attached something to the log. Then he walked back to the spaceship and it took off just as fast as it had arrived.

That's what I said: *he walked to the log*, right over the pond.

About ten seconds after the spaceship had disappeared into the sky, Tommy and I both let out the breaths we didn't know we were holding.

"Wow!" Tommy said.

"Let's get out of here," I said. I was just as scared as Rajah was.

"Come on, scaredy-cat, let's see what they put on the log."

Just then a jet fighter came roaring past just at tree-top level. I fell flat on the ground, and Rajah took off for home, his tail between his legs. Tommy stood

his ground.

"Wow!"

Hot on the tail of the first jet came two more.

"Come on, Doug." He was running for the rowboat. I was really scared, but I couldn't run. After all, I was the first to stand on the log at the center of the pond, and if Tommy went out there with the boat while I ran for home, I'd never live it down.

At the top of the log was a silvery rectangular box-shaped object. It really glittered in the sun. Tommy reached out to grab it.

"Wow!" he said. "It's got some kind of carvings on it."

I carefully stroked it; sure enough, on the four long sides there were tiny dots and things. The top, opposite where it was attached to the log, was smooth as smooth could be, but not the sides.

"It's like the drum inside a music box," I said.

"Or Braille. Maybe it's writing in Braille," Tommy said.

Just then, we heard some voices. My father came out on the dock with a lot of men with him.

"Doug, what are you doing out there?"

"Just looking at the log."

"What's that on it?"

"Oh, nothing. . . ."

"This spaceship came down and put something on the log," Tommy said, and blurted out the whole story.

My father ordered me to bring the boat back in and then he and

some of the other adults rowed out to look at the log while the others kept questioning us and talking about Russians and kids' imaginations.

I'm not sure they all believed us, but after a while my father did. "Doug's a good boy, I believe him," he said, after I refused to disagree with Tommy's story.

They brought in a bunch of men and trucks and equipment, spoiling a lot of our fields and crops (which they paid my father for, much more than he would have got out of them anyway), and completely ruined the pond for swimming. They cut the log just below where the silvery rectangular object was attached, but they didn't move the object.

"We can't move it, Doug; there's some kind of a force field that keeps it in place," Dr. Gaines said.

"Wow! Just like in *Star Trek*," Tommy yelped. Dr. Gaines was my favorite of all the men who had come in to look at our pond. He wasn't very old, though he had lost most of his blond hair and he wore rimless glasses. He wasn't crotchety and crabby like some of the others, who shooed us away or ordered us to leave. A couple of times he took us out to the building that they had rigged up on a couple of army pontoons. They were trying to melt the object down with lasers and phasers and cannons and drills and I don't know what. It was really exciting, with electricity and flashing lights.

They had built a regular real laboratory out on our pond.

It was about three days after the whole thing began that I found him sitting at the edge of the pond, staring out at the building over the log, looking kind of funny.

"Hi, Dr. Gaines," I said, sitting down and breaking off what looked like a nice juicy grass stem. It was. "How's the work going? Have you figured out that force field yet?"

"No, Doug, but we found out what the object is."

"Yeah? What is it?"

"They brought in one of those high-powered microscopes yesterday, and you know that roughness on the sides of the plinth?" (He called the object a "plinth.") I nodded my head. "It's writing."

"You mean like Braille?"

"Maybe. There might be Braille there. There's a lot of languages on it. Languages and alphabets we never heard of. But there's also French and Chinese and Latin and Japanese and every language anyone can think of."

"English?"

"Yes. English too."

"What does it say?"

"Come on, Doug. I'll let you see for yourself."

We walked out on the ramp that led to the building over the log at the center of the pond. All the air of excitement was gone. People were walking around, doing their work, all right, but looking kind of glum or dazed.

(con't. on page 102)

BARRY N. MALZBERG

UPPING THE PLANET

Malzberg's "On Ice" (January, 1973) was one of the most controversial stories we've ever published, but this short tale about the one man who could save our planet—and how he has to do it—just may become even more so . . .

IN THE AUGUST NIGHT an alien of humanoid appearance manifests itself to Mortimer who is, incidentally, relaxing with a science-fiction magazine. "Listen," the alien says confidentially, "I'll work you out something interesting."

"No deals," Mortimer says, "I have enough to worry about. Notice that I treat you matter-of-factly; I don't think that this is a dream and yet I refuse to panic. I've seen too much in my time. Now at last I'm starting to get a little sex. It helps."

"A simple deal," the alien says. Perhaps it is slightly deaf. "Ordinarily we'd knock the planet right out without negotiation; we've had quite enough. You're such a corrupt little race anyway, almost extinct, and we'd merely be hastening the process by a couple generations. But there's not too much interest in the facility to be honest with you and I've got a little leverage for bargaining. So if you want to save your fellow humans from a horrible fate, you'll listen to me."

"I don't care," Mortimer says, lighting a cigarette with what he hopes to be horrid casualness, let-

ting the copy of *Tremendous Science Fiction* fall limpidly from his knee to the flawed rug of his furnished room-and-half, frenzied roaches scrambling from the impact. "I told you, I'm a man of some substance now. See how I fail to be shaken. In spite of the fact that until three months ago I had been laid only four times in my life, three of them by the same prostitute, I am not psychologically damaged. It's all very easy—you make your own breaks. So why don't you leave me alone; I've got a heavy date tomorrow. Tonight I'm taking off, I have so much self-confidence I don't even have to go out all the time."

"As I was saying," the alien points out, "I propose a test for you: if you are capable of having twenty-four ejaculations in twenty-four hours, we'll let your planet survive. Otherwise we'll bring in some sophisticated incendiary devices and ring down the curtain on the *commedie humaine*. I speak all languages, you see."

"No one can have twenty-four orgasms in twenty-four hours,"

Mortimer says, "let alone ejaculations." He decides to adopt the alien's odd precision, it is a new tactic worth trying for difficult girls. "No man, I mean. Maybe a woman. And what does my coming twenty-four times have to do with saving the planet? That's a pretty ridiculous basis."

The alien gives him a revolting smirk and says, "That's our business. Say that we want to study human sexuality and, uh, this will enable us to. In fact, I get a certain charge out of watching human fornication; it's useless but I find it perversely satisfying. We have invisibility and unlimited access so I get around quite a bit."

"So what do you need the test for?"

"Well, it gets boring after a while. Simple voyeurism lacks a sense of continuity, an Aristotelian sense of compression. I thought that it might be amusing to follow one set of activities for a given period of time with penalties overhanging. It might even solve certain wearying personal problems of mine with which I will not burden you."

"Please do."

"I will not. You wouldn't understand. In any event," the alien says, "that's the deal. Twenty-four ejaculations in one of your days and your planet survives. Fail to make it and we wipe it out."

"Impossible," Mortimer says. "It can't be done. Besides, why should I cooperate with you? Who am I? Why make me responsible

for all this?"

"It could be anyone. Call yourself the victim of a coincidence."

"So take someone else."

"No," the alien says and leans forward, staring intently from blue, oval eyes which sparkle faint innocence. "I don't think so. I've gone to a lot of trouble to make this contact. Besides, I like your looks."

"I told you, I'll fail."

"So you'll fail. Be a defeatist. That will solve the problem very simple."

"I'm reasonably competent sexually now but I'm no lunatic. How much could I have stored up? I couldn't come near the mark."

"You have no confidence. So few of you do."

"And anyway, I think the terms are ridiculous. If I come twenty-four times in a day, why should that make men worthy of surviving?"

"Suit yourself. By the way, your twenty-four hours started five minutes ago. If you'll excuse me, I'll get going."

"Wait a minute!" Mortimer says. He finds that he is in a light sweat, something like the old failed-date damp, purely neurasthenic but then the interview has been peculiar. "What are the terms of these, uh, orgasms? In any circumstances at all?"

"Certainly," the alien says. "With any partners. If you will excuse me now, I'll be going. I shall of course be observing you

from afar with much interest and I wish you all the luck in the world."

The alien does indeed vanish, leaving Mortimer sitting alone in his room. He looks at the clock which indicates that it is nine twenty in the evening, an evening he had planned to devote to quiet reading and perhaps, sooner or later, a couple of intense phone conversations with new girlfriends whom he wished to keep on the string. It was all very easy when you cultivated a certain attitude: they wanted it as much as you do. He could have known it at eighteen as easily as twenty-seven but it is always better late than never, notwithstanding all that seed spilled on the ground.

He leans back on the chair and begins to think about the metaphysical implications of humanity: its worthiness, its survival possibilities, inferences toward immortality and so on, and diving through a subconscious process which he does not wholly understand, emerges from the other to find that he is anxious to make the attempt after all. Humanity has possibilities, it should at least be allowed to find its own destiny. Besides, there is all that lovely ass out there and he could

not bear to see it dwindling after only six months in the field.

He looks again at the clock and notes with dismay that it is now nine forty-five. Twenty-five more minutes have gone by; barely twenty-three hours remain.

He goes to the phone. At the phone he starts to dial, pauses, begins to think. He thinks of the phone call he will make, the posturing, the manipulation, the transit-time and the question of reaffirming a relationship. He thinks of qualms, shudders and the demands of mutuality. He thinks for seven minutes and twelve seconds, reducing the span of survival by that much more.

Then, sighing, he goes over to his bed and pulling down his pants slowly prepares himself. He will try it this way: at least it has the virtue of familiarity. The other thing is entirely too much of a hassle. He thinks of the alien: its rage and disappointment as it understands what Mortimer has done to him but it is only much later, in a different context, that he understands (nerves all-a-jangle, reflexes shot, eyes watery and desperate) that this is perhaps exactly what the alien wanted.

—BARRY N. MALZBERG

After You Stood (con't. from page 99)
There was this huge instrument set up in front of the object, and Dr. Gaines showed me one of the eyepieces, sort of like a real pair of binoculars.

It was already focused on the

English part of the object: "... Survey Galactique 42,373,249. This plaque marks the population center of the Milky Way Galaxy, as determined by Galactic Survey 42,373,249."

—GRANT CARRINGTON

WHAT WAS THAT?

Herewith a vignette compressed to powerful effect . . .

F. M. BUSBY

HURLITZ STAYS, after we are done with eating. We three sit in stasis; Hurlitz knows he is safe in this public situation. I wish I knew what else is in his mental file, but any question might tell him more than it could tell me.

Trevine is a consummate actor; his nonchalance is well done. A casual observer would believe he had all the night to swirl the last drops of brandy in his glass. But he doesn't, and we know it, all three of us.

It was quite simple in the planning, but the execution has not been simple. They can't be sure of what we do but they know it's important. First, waiting for Trevine, I was under surveillance by Tamira, whose scarred face shows only that even genius can err. Then her partner, Corander, appeared—as a stalking-horse, I think. Now they are gone, leaving us to deal with Hurlitz, whose competence is second only to his tenacity.

It's a three-day capsule, and two days were wasted waiting for Trevine to arrive with his pass to the secure area. The damned thing could blow within the hour

and lose the entire enterprise. I can't tell Trevine the locker-number in Hurlitz' hearing, because Hurlitz can call inside faster than Trevine can get there. No plan is flawless. The balance of forces seemed good when we began; now it doesn't.

"A pleasant evening," says Hurlitz. He swallows perhaps a few drops of his brandy while appearing to take a great gulp. By displaying his artistry he tells us that he is in command of the situation. I'd like to prove him wrong, but I can't. I'm trapped in a network of regulations and a shortage of time.

"Pleasant, yes," I say. I wait for Trevine to say something, but Trevine only yawns. *Scheist!* the man could try to stay awake, at least.

Hurlitz smiles. "Your friend seems tired." Trevine yawns again. So does Hurlitz. So do I, as Trevine says "It's been a long day, and . . ." I miss the rest, as my own jaws crack.

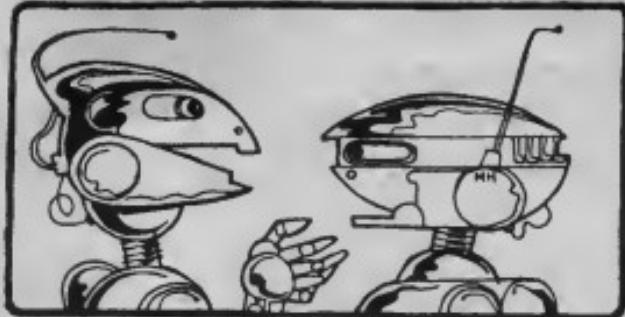
"On your side," says Hurlitz, "there will be many long daaaaays. . ." His yawn is wide.

My fingers shield my lips.

(con't. on page 118)

**ED
SMITH**

the Clubhouse



SF COMMENTARY #s 35/36/37, 39 (Bruce R. Gillespie, GPO 5195AA, Melbourne, Victoria, Australia. American Agents: Charles and Dena Brown, PO Box 3938, San Francisco, CA 94119. Irregular, mimeo. 9/\$4, 148 and 24 pp, July/August/September, November, 1973.)

In SFC #39, Bruce Gillespie suggests that, due to the high cost of postage in this country, the day of large fanzines in the United States is over. There haven't been very many Huge Fanzines in recent memory, whether because of postage rates, apathy, or the inevitable swing of the pendulum toward smaller and (sometimes) more frequent issues of fanzines. It is all the more surprising, then, to see the large, well-edited combined issue 35, 36 and 37 of *SF Commentary*. In fact, at first impression the fanzine struck me as almost intimidating. I started by looking over the issue in spare moments, usually opening the pages at random and starting to read something. Soon I was interested enough to read the whole fanzine straight through, and it

was enjoyable every page of the way.

SF Commentary is a fanzine that deals at some length (and surprising depth) with science fiction, as well as other topics. A wide range of subjects is discussed in a long, very good combination editorial and letter column, "I Must Be Talking to My Friends." This section of the fanzine starts off with a long, interesting ramble from Bruce about his life in the past while. It's an interesting, loosely constructed sort of column—for example, he quotes from letters or other fanzines where appropriate, then may add his comments on the subject. This gradually turns into the letters section, starting off with some interesting fan biographies.

Bruce knows how to strike just the right balance between critical material about science fiction and more personal material, and the inclusion of both makes *SF Commentary* have its own distinctive feel about it.

The feature articles in this issue were somewhat less interesting to me. The articles deal largely with an essay by Stanislaw Lem, two re-

views of his book *Solaris*, and a discussion of Soviet science fiction by Darko Suvin, which I bogged down somewhere in the middle of.

Issue #39 of *SF Commentary* is short, and makes for an interesting and relaxing few minutes of reading. Bruce published this issue while visiting America around the time of Torcon in 1973. He has the bare bones of what could be an interesting trip report in his editorial ("Now I'm Really Talking to My Friends), some good short book reviews, including a look at all three volumes of Robert Silverberg's *New Dimensions* original anthology series.

I sometimes had the feeling in reading the critical material in *SFC* that it was more interesting than the stories or novels they were writing about. So on the one hand I find the material interesting to read, but a little of it can go a long way. For instance, I enjoyed Stanislaw Lem's novel *Solaris* when I read it a few years ago, but got a little bored with the critical overkill it received in the earlier *SFC*. I also feel that the issues (especially the large one) would have benefitted from a little more use of artwork. Overall, however, *SFC* is a readable, usually entertaining fanzine.

Rating. . . 8

ALGOL #21 (Andy Porter, PO Box 4175, New York, New York 10017. Semi-annual, offset. 6/\$4, 67 pp., November, 1973)

This is the Tenth Anniversary

issue of *Algol*, and perhaps the best issue Andy Porter has published. It is also something of an Ursula K. LeGuin issue, containing her excellent essay, "Dreams Must Explain Themselves," in which she explains her method of finding the story and characters in her subconscious:

" . . . I don't write out descriptions beforehand, and would indeed feel ridiculous, even ashamed, to do so. If the character isn't so dear to me that I know all about him, what am I doing writing about him? What right have I to describe what William did when Helen bit his knee, if I don't even know what he looks like, and his past, and his psyche, inside and out, as well as I know myself? Because after all he is myself. Part of myself."

"If William is a character worthy of being written about, then he exists. He exists, inside my own head to be sure, but in his own right, with his own vitality. All I have to do is look at him. I don't plan him, compose him of bits and pieces, inventory him. I find him. . .

"This attitude towards action, creation, is evidently a basic one, the same root from which the interest in the *I Ching* and Taoist philosophy evident in most of my books arises. The Taoist world is orderly, not chaotic, but its order is not one imposed by man or by a personal or humane deity. The true laws—ethical and aesthetic, as surely as scientific—are not imposed from above by any authority, but exist in things and are to be found—discovered."

Also in the special LeGuin section is her National Book Award acceptance speech for *The Furthest Shore*, the concluding volume in her Earthsea fantasy trilogy, a reprint of an early story set in Earthsea, excerpts from an interview with her, and an article about the Taoist influences in her novel *The Lathe of Heaven*.

The rest of the issue also contains some Good Stuff. There is even a short, interesting interview with Robert A. Heinlein, conducted by Alfred Bester, brought to the attention of fans from its appearance in *Publisher's Weekly*. John Brunner writes on "The Art and Graft of Writing Science Fiction," which is interesting to read in conjunction with Ursula LeGuin's article about an encounter with the Hare Krishna people. There is a better balance of material in this issue of *Algol* than in any other issue I have seen.

The appearance of the fanzine is, as usual, very attractive, "professional" in the good sense of the word, without being cold. The artwork is good throughout, especially a Don Davis wraparound cover. There is a great variety of styles shown in the interior art, with most artists represented with only one drawing each, allowing for a healthy diversity. The only artist with more than one drawing in the issue is Tim Kirk, with a delightful series of drawings illustrating Ursula LeGuin's story. I like the "new" *Algol* more with each issue I see. It will almost certainly be nominated for a Hugo again this year, and, in

my opinion, deserves at least the nomination, and possibly the Hugo for best fanzine of 1973.

Rating . . 9

SYNDROME #3 (Frank Lunney, 212 Juniper St., Quakertown, Pa. 18951. Irregular, mimeo. No price or date listed.)

This is the third issue of an amusing, low-keyed fannish fanzine that has some fine unusual writing and some excellent cartoons. Frank's editorial is well done, but, as usual, I wished he had written more. R. Meltzer writes of various youthful trivia items (I thought I was the only one who still remembered Pud bubblegum with the insipid accompanying cartoons), and Jay Kinney (who has a fine freaky cover and many good cartoons inside the issue) writes almost as strangely as he draws. "How I Got Here From There" tells how Jay traveled from San Francisco to Tolona, Illinois.

But the central item consists of four pages of "Cartoon Jams" between Jay Kinney and Grant Canfield, another fine fan cartoonist and fanwriter. The combination of their two unique styles make for some really amusing cartoons.

Harry Warner makes an interesting point about the scarcity of first-rate fanwriting in the letter column:

"One possible reason for the lack of people producing big quantities of first-rate fanzine writing just now is the lack of frequent big fanzines. I don't keep records of what I turn out

for fanzines, so I can't be certain, but just at a guess, I'd say that not more than one-third of the formal articles I wrote on request from mid-1971 to mid-1972 have seen print, leaving out of the calculation my columns and the occasional two pages in *Locus*. The frequent fanzines are mostly small, written in large part by editors and a few close associates. The big, large circulation fanzines rarely appear oftener than two or three times a year, sometimes less frequently. So I stick into FAPA a lot of stuff that I'd like to reach a larger audience with, simply because I'm pretty sure it'll be circulated in a month or two. All this might explain the reason for *SF Commentary's* extraordinary ability to get fine material: Bruce publishes often enough a big enough fanzine to encourage people to contribute."

Syndrome is an amusing, lightly written fanzine that is a pleasure to read.

Rating. . .6

OTHER FANZINES:

RIVERSIDE QUARTERLY #21 (Leland Sapiro, Box 14451 University Station, Gainesville, FL 32604. Quarterly, offset. 4/\$2, 95 pp., August, 1973.) Some interesting articles about science fiction and some pedantic ones. Rating. . .4

Locus (Charlie and Dena Brown, PO Box 3938, San Francisco, CA 94119. "Approximately twice a

month," mimeo. 18/\$6.00.) Rating. . .7

KYBEN #5 (Jeff Smith, 4102-301 Potter St., Baltimore, MD 21229. Irregular, mimeo. 35¢, 3/\$1.00, 26 pp., September, 1973.) Rating. . .4

FANATIC #2 (Robert Ellis, 13334 Nadine, Huntington Woods, Michigan 48070. Irregular, mimeo. Available for artwork, contributions, trades with your fanzine, or a letter of comment. 12 pp, October, 1973.) Rating. . .4

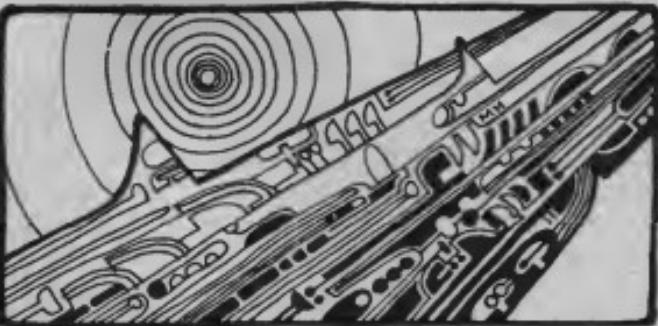
STARLING #26 (Lesleigh and Hank Luttrell, 525 West Main, Madison, Wisconsin 53703. Quarterly, mimeo. 50¢, 5/\$1, 35 pp., October, 1973.) A good fanzine devoted to science fiction, films, rock music, comics, and lots more. Rating. . .7

CYPHER #10 (James Goddard, Plovers Barrow, School Road, Normansland, Salisbury, Wilts, UK. American Agent: Cy Chauvin, 17829 Peters, Roseville, MI 48006. Irregular, mimeo. 60¢, 5/\$3, 54 pp., October, 1973.) One of the better fanzines devoted to serious discussion of sf. This issue contains a transcript of a discussion between Brian Aldiss and James Blish that is particularly interesting. Rating. . .7

TALKING STOCK #13 (Loren MacGregor, Box 636, Seattle, WA 98111. Irregular, mimeo. No price listed, 27 pp., September, 1973.) Rating. . .5

—ED SMITH

the Future in Books



Mike Hinge: THE MIKE HINGE EXPERIENCE, Supergraphics, 218 N. 6th St., Reading, Pa., 19601; 48 10½" × 14" pages; \$3.00 plus 25¢ postage.

Jim Steranko's Supergraphics has done us all a service in the publication of this collection of Mike Hinge's outstanding artwork. Long-time readers of this magazine and its sister publication, FANTASTIC, will recognize many of the drawings published here from their original appearance as illustrations in these magazines. But their present size (4½" × 12½" for the single-column drawings) allows the finer detail to shine in all its glory—and Hinge is a master of detail.

Although the majority of the drawings in this volume date from Hinge's 1969 debut in FANTASTIC, his 1962 frontispiece makes clear the fact that his talent has been mature for more than ten years—and raises the question of why it took so long for him to gain acceptance in the science fiction field.

I first met Mike in 1958, when he was newly emigrated from New

Zealand and attending his first U.S. science fiction convention. Even then his work—published primarily in fanzines—was distinctive and professional in nature. Steranko, in a brief introduction to this volume, traces Hinge's early career, his move to this country, and his success in the commercial art world—but unaccountably omits all mention of Hinge's five-year siege on the science fiction magazines, none of which accepted his work, and his subsequent publication here (for which, with all immodesty, I must take credit), which finally opened the doors for his publication in higher paying sf markets.

In my opinion, Hinge is an original—and was perhaps too original for the sf magazine editors (who doubled as art directors) of the mid-sixties. When I first planned the ill-fated *Stellar* in 1967, Mike gave me a tour of his apartment (which doubles as his studio) and I was stunned by the wealth of drawings and paintings and sketches already on hand. One of my strongest regrets is that the two double-page spreads Mike did for *Stellar* have never been published—nor, for

some reason, are they to be found here, more's the pity. Soon after I assumed the editorship of these magazines I was able to introduce Hinge to professional sf magazine print (with two illustrations republished here) in the October, 1969, issue of FANTASTIC. Shortly thereafter, Mike's department headings began the upgrading of these magazines' appearance—and remain to this day in this magazine:

Paintings which had been rejected *five years earlier* by tunnel-visioned magazine editors appeared on the covers of the November, 1970, AMAZING (previously rejected by another magazine as "unreproducible"), the November, 1971, AMAZING and the April, 1972, FANTASTIC. With the May, 1972, issue of this magazine Mike premiered a new and vivid style—one which popped up again on the covers of the January, March and August, 1973, issues of AMAZING and the October, 1972, FANTASTIC (my personal favorite). By then others were also discovering Hinge. His covers appeared on books published by Putnam, Berkley and Lancer, among others, and he has appeared twice on the cover of *Time*. And, more recently, he has done interior illustrations for *Analog* which have won him considerable praise. (We'll have more of his paintings on upcoming covers.) Several of his paintings are reproduced here as line drawings—essentially uncolored preliminary (but complete) drawings. Because they lack either color or black

areas, they are less effective than the remainder of the drawings published here, but they still have a powerful visual impact.

In addition to the approximately two dozen republished illustrations (all from AMAZING and FANTASTIC, although totally uncredited by Supergraphics) there are eleven of Hinge's posters (which, reproduced as single pages here, have suffered slightly from reduction and loss of detail), a good number of previously unpublished drawings in the same single-column format used for the illustrations (including the original, full-column illustrations which were truncated for publication with the second instalment of Poul Anderson's *The Byworlder* in the August, 1971, FANTASTIC, due to an unforeseen format change), and, as a centerpiece, a marvelous two-page erotic masterpiece. In style, Hinge's work covers a broad spectrum, from straight illustration to pure design. Always ingenious, always beautifully executed, these are drawings which repay continued study and reward appreciation.

And they only scrape the surface of Hinge's many personal portfolios. The die-cut cover has a large "I" which suggests that further volumes of *The Mike Hinge Experience* may be forthcoming. I hope so. In the meantime, this first volume is highly recommended.

—Ted White

THE N.E.S.F.A. INDEX; INDEX TO

THE SCIENCE FICTION MAGAZINES 1966-1970; INDEX TO THE S-F MAGAZINES, 1951-1965, all available from The New England Science Fiction Ass'n, P.O. Box G, MIT, Branch, Cambridge, Mass., 02139; \$3.00, \$5.00 and \$8.00.

In 1952, Don Day published his at that time unique volume, *Index to the Science Fiction Magazines 1926-1950*, a monumental work which covered virtually every American sf magazine published since Hugo Gernsback launched AMAZING STORIES in 1926. Omitted were earlier, quasi-sf magazines (such as *Thrill Book*) and horror-fiction magazines, primarily *Weird Tales*. Included were listings of the actual issues of every magazine indexed (thus giving novice collectors like myself of that time an idea of exactly what *had* been published, and in what format), and listings of every story, both alphabetically by story title and alphabetically by author. In as many cases as were practical, pseudonyms and "house names" were also identified. I was a high school student and the day my copy of Day's *Index* arrived I took it to school and spent most of my free time (and much of my class time as well) reading it. I read the entire listing of magazines straight through and I read the entire alphabetical listing by author straight through. Such was my dedication in those days to science fiction.

I remember the Day *Index* (which I still have and use) with great affection. The dustwrapper

was by Frank R. Paul, then dean of sf illustrators, and the typography (by varityper) was handsome and readable. I learned a great deal about sf from that book and it has served me well in the intervening twenty years.

Ever since the original publication of Day's *Index* both Don and others have talked about sequels. (In the mid-sixties I foolishly sent pre-publication money to one such successor, Norman Metcalf. He never published—nor returned my money.) Only one person/group has actually followed through and produced a series of volumes specifically designed as successors to the Day *Index*.

In 1966 Erwin S. Strauss (whose letter to FANTASTIC was instrumental in launching my Worldcon editorial series) compiled the first of these sequels, the *Index to the S-F Magazines, 1951-1965*. He did so as a member of The MIT Science Fiction Society, and with the MITSFS' help. Where Day had compiled his listings on thousands of file cards, Strauss made use of more sophisticated computer memories and print-outs. This must have saved a great deal of time and effort (the book, like its successors, is printed directly from the print-outs by photo-offset) although the actual time spent copying and entering the data from the magazines involved could hardly have been less. The result was a large hardcover book of more than two hundred pages which, while more functional and less handsome in appearance than

Day's, was no less useful.

Subsequently, the New England SF Ass'n, a successor group to the MITSFS, published two follow-up volumes, both reproduced from computer print-outs and designed to complement Strauss' *Index*. The 1966-1970 *Index* is also hardbound, with over eighty pages, while the most recent, covering both magazines and anthologies of new stories published in 1971 and 1972, is soft-covered and has only half as many pages.

These are utilitarian books—they are indices, pure and simple. As such, their value rests completely on their usefulness to the bibliophile, collector or historian, and boils down to their accuracy of information.

I have not made any attempt to find flaws in the data transcribed, nor have I heard of any in the seven years since the Strauss *Index* was first published, so I am going to assume that the information provided is complete and accurate. However, I have been disturbed since the publication of that first volume by one by-product of the use of the computer in the indexing—double entries for collaborations. That is to say, each collaborator is credited with the collaboration—but without mention of the other collaborator. For example, my story, "Policy Conference," which I wrote with my first wife, Sylvia Dees, is credited separately to each of us in the author-listing section. In the story-title listings, the story is listed twice, in immediate succession, for

each of us. (Unlike the Day *Index*, these indices do not reverse the order of Author>Title for the title index—this was apparently beyond the computer. Thus, one cannot read down the left side of the column for the title of a story, when using the title-listing.) I wish that collaborations could have been more explicitly identified than this. However, this is a minor cavil.

Basically, then, if you have need for indices to the sf magazines published from 1951 to present, these are the most complete and most useful. No more need be said.

—Ted White

Larry Niven, John Brunner, and Jack Vance: THREE TRIPS IN TIME AND SPACE, Hawthorn Books, New York, 1973, 193 pages, hardback, \$5.95.

Collections of science fiction stories based on a common theme have a sparkle and appeal that ordinary anthologies lack, perhaps because the stories' common theme gives the collection a unifying factor. Robert Silverberg, the unofficial editor of this anthology and several others like it, has seemingly taken this idea and refined it a step further: rather than looking through the pages of mouldering magazines, hoping to find stories to reprint that will match his chosen theme, Silverberg has specially commissioned authors to write stories around a theme he, or another sf writer, has selected. This book is one of the results.

Silverberg asks in his introduc-

tion: if it were technologically and economically possible to travel instantaneously anywhere on earth, what kind of world would we have? This is the theme these three authors have tackled in their stories; and they have produced competent, if unexceptional, works.

In Larry Niven's "Flash Crowd," "displacement booths" have been set up around the world and have been in operation 20 years when the story opens. Jerryberry Jansen, a news-taper, has been making his daily rounds looking for news when he spots a policeman stopping a woman shoplifter. "You can't arrest me," she screams, and hits the policeman on the head with her handbag. Jansen starts shooting the scene with his camera, and it is broadcast nearly instantaneously on nationwide news tv. More people arrive via displacement booths and get into the fight. A small riot starts. Someone breaks a window and begins looting. Soon it has grown into a full scale riot—all in a matter of fifteen to twenty minutes—which takes the police a day or two to get back under control.

How could it happen so quickly? What caused it? Apparently, Jansen finds out, the riot was caused by the new "long distance" displacement booths recently opened, coupled with Jansen's own instantaneous tv coverage of the event, which attracted looters, thieves, and just plain curiosity seekers. Together, these create a real problem, and the rest of the story is about Jansen's attempts to discover some logical way of

dealing with these "flash crowds," which threaten to grow worse in the future.

Niven's story is essentially a problem or puzzle story, a sort of technological whodunnit, and Jansen's search for a solution to the problem gives Niven a justifiable excuse for examining in-depth the history, background, and functioning of the displacement booths. Niven often throws in some good insights (such as his picture of a Tahiti so overcrowded with tourists that people have to have displacement booths in their homes), and he deals more realistically with problems that might actually arise from instantaneous travel, but his story becomes toward the end more of a lecture tour than a piece of fiction. And "Flash Crowd" has practically no emotional content whatsoever.

In John Brunner's "You'll Take The High Road," the protagonist, Joel Crane, tells one of his newly rich friends in a fit of jealousy that he plans to "transmitter" over to England for a vacation. Trying to be helpful, Joel's rich friend calls one of the people he knows in the transmitter business and asks him to send Joel some advertisements. Soon Joel finds himself entangled in red tape and committed to take a trip he doesn't want to make, and can't afford.

There is a lot of wit in Brunner's story, and a number of sly digs at present-day society ("It took six months for a letter to arrive, unless it was franked by a big corporation that the post office feared"), but at times Brunner's humor degenerates

into slapstick and becomes heavy-handed. For instance, at one point a Colonel Marcus Tecumseh Sherman Basketfield breaks into Joel's apartment and tells him that he shouldn't go to a foreign country and spend money, it's unAmerican. Then the Colonel slips Joel some bogus Confederate money to stave off a lawsuit.

Brunner's story also has some serious aspects. His portrayal of Joel's frustration once he is caught in a bureaucratic web of red tape is one example of this serious side, and Brunner's skillful handling of it is guaranteed to make the reader sweat in frustration along with Joel. But "You'll Take The High Road" is not a realistic extrapolation like Niven's story, and this mishmash of humor and seriousness largely spoils the work. We can't take it entirely seriously, because the story has too many absurd and numerous details, and we can't entirely enjoy the story as humor, because its serious "frustrating" aspects make it uncomfortable and irritating to read. Brunner did not make up in his mind which effect he wished to achieve, humorous satire or serious extrapolation, and as a result he succeeds at neither.

In "Rumfuddle," Jack Vance approaches the idea of instantaneous travel in a different fashion than either Niven or Brunner. He postulates a system of "cognate" worlds, which are similar in conception to the parallel or alternate worlds most sf readers have heard of. A scientist has established "passageways" between these worlds and various parts of Earth, and people

choose a world to live on that suits their tastes and temperament.

The plot in Vance's story revolves around the efforts of one man to find out why his wife has closed off the passageways to their world, and what has happened to her. "Rumfuddle" thus is a puzzle story, like Niven's, and not the delicate blend of fantasy and science fiction that Vance has become most noted for in recent years. Vance's plot is much more convoluted than Niven's, and while the twists and turns Vance has included in the novella make it more fun to read, they also make it less believable. The logic of the story becomes somewhat strained toward the end, like the time-travel stories which the novella resembles in part. And sadly, Vance's story has no more emotional content than Niven's.

A writer cannot do his best if he has to write his story around another man's idea, an idea that he does not deeply care and feel about, and this is perhaps an inherent flaw in the concept of the original "theme" anthology. To repeat, these stories are competent, but unexceptional.

—Cy Chauvin

Isaac Asimov: THE EARLY ASIMOV, Doubleday, New York, 1972, Hardback, 540 pages, \$10.00.

This book is a giant hulking monster with a price tag to match, and anyone who is willing to shuck out that kind of money has a right to expect a lot of quality fiction. Well, for the most part, that's what

you'll get if you pick this one up. The title is self-explanatory, but Asimov clarifies it even more by saying that the book contains all the stories he wrote during his first eleven years which were never published in any of his other short story collections.

There are twenty-seven stories listed in the contents page, presented in the order that they were written—not necessarily the same as the order in which they eventually appeared. Some of the stories are quite lengthy and should be called novelettes, but Asimov has tried to keep things simple.

In addition to the fiction, Asimov has been kind enough to sustain a running commentary and history of each story. He tells how he conceived it, where he tried to sell it, what the rejection slips said, what color socks he was wearing when he wrote it, etc., etc. There is no doubt that Asimov had a fantastic time writing the introductions and afterwards between each story; and he seems to take special relish in the nostalgia that gushes from just thinking about the good old days.

The personal commentary is not only enjoyable reading in its egotistical, comic manner that has become an Asimov trademark; it is also very informative when he talks about his early attempts to sell to the New York editors. The accounts of meeting a young John W. Campbell and a teen-aged Fred Pohl are absolutely captivating. There is a certain feeling of the wide-eyed adolescent seeing his dreams come true by meeting and

selling to the editors of your favorite science fiction magazines.

It would be too large a task to go into the stories in any detail in this space, but there are some pieces that I'd like to point out as personal favorites. "Trends" was a fascinating tale by a young and imaginative mind. "Heredity" was interesting in its presumption of Hitler's demise, although it was written around 1940. "Death Sentence" and "The Red Queen's Race" are pieces which could stand up against most of the fiction that finds its way into the awards nomination ballots. And of course, you've got to like some of the stories just for the titles alone: "Half-Breeds on Venus," "Christmas on Ganymede," "The Little Man on the Subway," and I'll never forget "Time Pussy" for more than one reason.

The writing in these stories, and especially in the earlier of them, is competent and readable, but it suffers from stiff dialogue and characters that were stock-in-trade during the 30's and 40's, i.e., stick people, cardboard, or any other appropriate label. The young Asimov was writing these stories in a time when literary sophistication was still almost a generation away. He was writing when SF was *really* the literature of ideas, and it is wonderful, intricate, informative ideas that he crams into these stories. When you read SF like this, it becomes a simple matter to ignore some of the coarse, unpolished prose, because the stories are so damned enjoyable.

Everyone who digs Asimov must

get this book. It is a must not only for the stories, but also for the personal look he gives you into his writing and his life. After you finally flip past page 540, you find yourself thinking: "You know, I really feel like I know this guy!"

And you do.

—Thomas F. Monteleone

David Gerrold: **THE MAN WHO FOLDED HIMSELF**, Random House, New York, 1973, 148 pp., Hardback, \$4.95.

David Gerrold is an energetic young sf writer who has already written four other novels (one a collaboration with Larry Niven) and a collection of short stories, in addition to editing two anthologies of original short stories (*Protostars* and *Generation*). His chief claim to fame, however, is probably his *Star Trek* script "Trouble with Tribbles," which was nominated for a Hugo award in 1967. *The Man Who Folded Himself* is his first novel to be published in hardcover, and is dubbed "The Last Word in Time Machine Novels" on the cover. That it may be; but while the novel is extremely clever in parts, and even has some pretensions toward profundity and significance, it is basically lightweight and made for fast reading.

The novel is told in the form of a diary, and it opens with an account of Dan—the main character—being told by his Uncle Jim that if he keeps a diary, his allowance will be increased to a thousand dollars a week. In an entry a few pages later,

we learn that Dan's Uncle Jim has suddenly died, and left him a package with a strange belt inside. A time travel belt.

Gerrold describes the belt in some detail, but it is obvious that he is not really interested in the technology behind the belt—he never really explains how it works, for instance. Instead, Gerrold is interested in the implications of such a device—how would a human being respond to time travel?—and spends the rest of his novel exploring these implications.

For instance: how would a person react if he "met" himself? Dan jumps forward in time, only to discover "himself" (or rather his future self) sleeping in his bedroom. There is confusion and shock on the part of the "present" Dan, but the "future" Dan (or "Don," as Gerrold conveniently calls him) is rather blasé about the situation: after all, he's been through the whole experience once before, and knows exactly what's going to happen! Gerrold also quite ingeniously retells this section of the story over from "Don's" viewpoint, enabling the reader to see this event from both sides.

Another interesting notion Gerrold explores is what he calls "erasing" a past event. The first occurs when one of Dan's future selves comes back to warn him not to bet on a horse race, or he'll get in trouble. So Dan doesn't bet on a horse race. But by doing this, Dan has altered the circumstances which caused his future self to come back to warn him—which means that his future self will not have a reason for

(con't. on page 118)

could have spread so rapidly through a species with such command of applied biology."

"Good point," Olaf Mukerji said. "It couldn't have, not unless it was spread deliberately, and that brings us clear back to the idea of warfare, or a decision to commit racial suicide. And when we get back to something we've talked about *ad nauseam* it's high time to stop waffling and reach a decision. I formally move that Ian be given all the facilities he requires. I think the idea is admirable and I can imagine the results being sensational."

IT WAS NOT, however, Ian who generated the next sensation.

Ten days into the next monthly work-period, he was talking with Lucas Wong and Nadine Shah about some snags that had developed in the first design for the mock-Draconian. Grouped around a computer display-screen, they were testing the various analogies derived from surviving species which best promised to allow the occupant to inhabit the device in comfort. At the far end of the computer and communications hall Abdul Hosseini was engaged in a routine series of checks of their satellite relay equipment.

The conversation was becoming heated; none of them noticed when Abdul broke off his work with an exclamation and bent to listen intently to one of the links connecting the base with the ar-

cheological digs.

But a few seconds later he called out and interrupted them.

"Hey! That was Cathy! She and Igor have found something incredible at the peat-site!"

"What?" the other three demanded in unison.

"She says it's indescribable, but so tremendous we all ought to drop whatever we're doing and go there at once."

"Can't she send us a picture?" Ian asked.

"She says Igor is too excited to bother rigging the cameras, and anyway they want to strip off as much cover as they can before nightfall." Abdul reached for a switch and sent out a signal for Rorschach, who shortly answered over his personal communicator.

He made his mind up the moment he had heard the news.

"If Igor says it's that remarkable, we pay attention. Pass the word. Is Lucas there? Ask if he'd mind being left alone here for a short while."

"I mind very much," was the reply. "But go ahead, and bring me some souvenirs when you come home."

THEY REACHED the peat-site well before sunset, and the moment they breasted the adjacent hill over which the conveyors were carrying spoil, they realised just how accurate Igor's claim had been.

Now, the huge pit was about

ten metres deeper than when Ian saw it for the first time; the digging-machines were all concentrating on one small area near the centre.

Small by comparison with the full extent of the site, but not with a human being. Cathy and Igor were both dwarfed by the walls of the pit, and at its bottom...

Cathy caught sight of the new arrivals as they left their hovercraft and came hurrying down a slanting walkway from the pit's rim. She rushed to greet them, though Igor offered no more than a cheerful wave and a shout. Both were muddy to the knees with the mess caused by the high-pressure hoses used to undercut the cover.

"It's fantastic!" she shouted exuberantly as she flung her arms around Ian. "Isn't it fantastic?"

The others were too astonished to do more than nod.

What was being revealed was a low building, consisting of a hexagonal base some twenty metres on a side, of indeterminate height because as yet the digging-machines were a long way from the base of its walls. But its height was unimportant. What did matter was that on its roof, glistening in the sunshine and not simply from wet but from the vividness of its colours—blue, red, green, yellow, in alternating hexagons that were large and regular on the back,

small and regular around the mid-section, much smaller and less distinct but still very regular below...

A statue. Unmistakably, a statue of a Draconian. But at least eight times life-size.

"Marvellous!" Rorschach whispered.

"And amazingly close to our reconstructions, too!" Nadine said in high delight. "Apart from size, I mean. Though I never dared guess that they had such beautiful patterns on their skin!"

Proudly leading Ian by the arm, urging him towards the platform level with the statue from which Igor was directing the machines, Cathy said, "We spotted the regular shape of the building, of course, which is why we chose this spot to make a deep trench, but at first we thought the thing on the roof was just a pile of rubble. Goodness knows what it's finished with, but that surface has some very weird electrical properties and gave back the most misleading reflections. But you haven't heard the half of it."

"Very exact," Igor rumbled, wiping sweat from his face with one hand as he carefully reaimed a water-hose by remote control. "You, and we, have seen a quarter. Buried under all this muck, *there*, and *there*, and *there*"—he pointed at the stratified, sectioned walls of the pit—"there are three other buildings apparently identical with

this one, and each would appear to have another similar statue on the roof."

"I can almost imagine," Ian said soberly, "the ghosts of the

What Was That? (con't. from page 103)
"Four-oh-seven." I sip from my glass. "Yes; many."

Trevine says no goodbyes as he stands and leaves the place. "You were wise to give it up," says Hurlitz.

I yawn again, from reflex. "Yes. It's foolish to dispute the greater law."

"I'm glad you understand that," said Hurlitz. "I don't have anything against you people, person-Books (con't. from page 115) coming back to warn him. So how did he come back to warn Dan? Paradox.

Despite the many interesting elements in the book, it is more of a clever stunt than something of real lasting merit, such as H. G. Wells' *The Time Machine*. This is due to Gerrold's failure to develop much of his novel; it has no real structure; with a problem, suspense, and a climax, but is more a series of loosely connected events. Gerrold also skims over a lot of possibly interesting material in what is, after all, a rather slim book; on pages 63-66, for instance, he lists dozens of historical events that Dan has witnessed, but never bothers to give a detailed description of any of them. Two or three of these events, suitably documented and blended into the book, could have added a lot more depth to the novel than this bare-bones four-page summary.

The novel is cyclic, ending like

Draconians chuckling at the way they keep springing surprises on us."

—*to be concluded—*

—JOHN BRUNNER

ally. But I can't let you do what you're trying to do." He leaves.

A few minutes later, the capsule does its intended work; we have won a skirmish. No one is hurt, and more information is at large. There is still brandy in my glass.

A little knowledge is a dangerous thing, if one lacks it.

When a man yawns, he does not hear.

—F. M. BUSBY

Robert Heinlein's 1941 story, "By His Bootstraps," and is populated exclusively by duplicates of Dan. This makes the novel seem very artificial (despite the logic with which Gerrold develops his premise), and makes realistic characterization especially difficult. Gerrold doesn't surmount this problem, and Dan remains shallow and undeveloped—a piece of folded cardboard. There are some attempts at profundity in the novel—Dan's relations with his duplicate-future selves (masturbation or homosexuality?); his witnessing of his own death—and while they may interest us intellectually, they can't move us emotionally, because it is impossible for us to identify with Dan very deeply. Ultimately, the novel is shallow because Dan's characterization is shallow.

The Man Who Folded Himself is entertaining, but like a paper airplane: made to be used once, then thrown away and forgotten.

—Cy Chauvin
AMAZING

guzzling anti-pollution devices), and that the "all-electric" homes widely promoted for new-home buyers "consume about three times more energy than conventional furnaces to produce home heat." He wants to see "the insulation of old and new houses which would quickly pay for itself in fuel savings" (but many houses *are* well-insulated—especially those with electric heat); a reduction in the extensive illumination in office buildings and stores; and "a reverse of the pricing system which rewards larger users of electricity with much lower rates than smaller homeowners."

And, finally, after a number of other points (such as "the flagrant waste of fuel by the military"), he makes his major score:

"For three years, against the advice of his own task force, Mr. Nixon refused to lift the oil import quota until this past spring. As Ford Foundation energy specialist David Freeman says, he could have alleviated the energy shortage (until this October) with a stroke of the executive pen. But the oil industry wanted the import quota to protect high domestic fuel prices.

"From President Nixon, big business receives insupportably higher prices, backing for pollution and antitrust exemptions, more subsidies and tax credits.

"Is it any wonder why these cor-

porate maestros have been reluctant to criticize the White House for the Watergate mess?"

IN OTHER WORDS, the energy crisis is a red herring. Oh, it exists. We do have shortages. But they were not created by the Arabs, from whom we have imported only about 10% of our total petroleum supply—they were created right here at home, by the oil industry, which has profited enormously from these shortages *and stands to profit to a far greater extent in the months to come.* The shortages are not in crude oil, but in refined products. The shortages have occurred because the oil industry, despite extremely accurate forecasting indexes—or perhaps *because* of these forecasts—has neither built new refineries nor made efficient use of present refining capabilities.

Gasoline does not cost 50% more to refine now than it did a year ago. Nor does the crude oil from which it is refined cost 50% more today. The price of gasoline is determined, rather, by its *scarcity*—by the fact that the less there is to be had, the more can be charged for it. (The same "capitalistic" principle applies in the supermarket—when beef and poultry were in short supply, the prices in some cases went up by as much as 400%—from 25¢ a pound for chicken a year ago to a peak of \$1.00 a pound in the summer of 1973. These prices do not reflect increased costs; they reflect the reaction of the market to decreased supplies.)

And why is there less?

Why has Mr. Nixon instituted a national policy which will increase the amount of gasoline consumed by most automobiles and especially by the trucking industry (which, as I write this, is protesting vigorously in the form of wildcat highway blockages)?

It is my belief—and I underscore the word: *belief*; I can't prove it—that two interlocking factors are at work here.

The first is the shortsightedness of big industries—their willingness to sacrifice long-term benefits for immediate profits—and their control over (and indebtedness to) Mr. Nixon.

The second is Mr. Nixon's willingness to exploit national crises for his own benefit.

TO UNDERSTAND my first point, we need only look at the experience of New Yorkers during the late 1960's. During that time the telephone service in New York City almost came to a standstill. Entire sections of Manhattan's business community found themselves unable to communicate by telephone, either with each other or with the outside world. There were massive daily breakdowns in Manhattan exchanges. Why? Ma Bell, popularly credited as a "smart," long-sighted corporation, went for short-term profits and simply ignored obvious consequences. At that time there was an ongoing office-building boom, bringing about—even without any other changes in service—a

continual increase in the need for new phones, new lines, more capacity in existing exchanges and new exchanges as well. Additionally, New York Telephone was promoting a massive *change* in service—from a single line (or a few lines) into an office switchboard, to *individual* lines to each individual office telephone! Effectively this meant that where a large office might previously have had a dozen lines feeding perhaps one hundred individual phones, that office would now require one hundred outside lines! This was promoted as a "direct dialing" advantage, but its effect—*unplanned for by New York Telephone!*—was to totally overload the exchanges which handled these offices.

There was a lot of breastbeating by telephone company spokesmen, not a few Mea Culpas, and a massive campaign within the company at the end of the decade to put matters to right once again. But what it really boiled down to was this: New York Telephone saw a chance to increase corporate phone bills and lept for it, despite the obvious hemorrhage this would cause in the exchanges. "Our growth projections were off," claimed the most foresighted public monopoly in the nation. *Oh, really?*

Today we're being told that the oil industry simply didn't plan for present fuel needs, or that "environmentalists" held back the construction of new refineries. But present refining capabilities aren't being fully utilized, and the FTC has charged the oil industry with

collusion to *create* present shortages.

Why would the oil industry *want* these shortages? The obvious answer is that they would bring about exactly what has occurred: prices have risen dramatically (today's headlines speculate that these price rises will touch off a new round of inflation—just as food prices were starting to swing down again), and the "independant," off-brand gasoline vendors are nearly out of business, their prices forced to the same high level enjoyed by the "majors."

By way of example: A quarter of a mile from here is a Scot gas station which until last spring sold its gas for between 3¢ and 5¢ a gallon less than the major brands charged, and stayed open twenty-four hours a day. Today it charges about the same as the major brands—or, occasionally, 1¢ a gallon *more*—and it closes early each evening. A year ago I bought my gas there, and the station was always busy except in the worst weather. Now I buy my gas at an Exxon station which charges 1¢ a gallon less for regular, and when I go by the Scot station I see few cars at its pumps.

Nixon's administration has played hand-in-glove with the oil interests. Higher prices are *encouraged*, ostensibly as a means of holding down public consumption of gasoline. But there is no way of avoiding one simple fact: The oil companies are making *more* money by selling *less* of their product. They aren't going to complain.

In fact, it has been through the Nixon administration's inept juggling of price-controls and supports that the inherent weaknesses of the traditionally capitalist supply-and-demand system have been exposed. What we—the consumers—have learned is that abundance is undesirable, and scarcity is profitable. You run a large poultry farm? Kill fifty thousand chicks—by so doing, you can drive the price of your marketable chickens up by 400%. Grow less, make larger profits. You have a beef ranch? Hold your cattle back from slaughter—you can drive the price up by at least 50% when you do send them to market. You run an oil refinery? Cut back its capacity, and—

But you get the point. At last it has become bad business to operate efficiently, at least if you pass the savings on to your customers. At a time when we are capable, as a nation, of producing consumer goods more cheaply than at any other time in our history, these goods are costing more.

Why?

Ask the federal government. Ask Mr. Nixon.

Ask Mr. Nixon about milk price supports. Ask him about oil import quotas, depletion allowances, etc. Ask him why he picked 50 mph as a national speed limit instead of 55 or 60.

And ask him about the illegal contribution of millions of dollars to his 1972 campaign by corporations. (Corporate campaign gifts have been illegal since 1907.)

EPLOITATION: One month ago, as I write this, Richard Nixon was very close to impeachment. He had just (illegally) fired Archibald Cox for prying into his secrets and pressing a court suit to gain access to his tapes. Subsequently Mr. Nixon has denied the existence of two of those tapes and turned over a third from which the crucial 18 minutes was erased, an erasure for which "no innocent explanation" could be found. Additional evidence of misconduct, private enrichment at the public's expense and other impeachable offenses have come to light over the last month. Yet many observers feel he will not be impeached. Why?

Because the public has something more immediate to think about—the "energy crisis." Congress, while still instituting preliminary impeachment proceedings, has voted this man dictatorial "emergency powers" with which to deal, in his usual too-little, too-late way, with this new "crisis."

This is, I repeat, a "crisis" which has been looming for many months. It was first forecast *more than a year ago*. Although the Arab oil embargo has underscored the existence of this "crisis," it was possible all throughout the spring and summer of 1973 to build reserves sufficient to render such an embargo painless (for us, if not for Europe and the Japanese, whose major oil supplies

come from the Middle East). This was not done. Why?

It is hard to avoid the conclusion that even if he did not see this "crisis" building in parallel with his own Watergate crisis, Richard Nixon has exploited it to the hilt to divert attention from his own problems.

IT HAS BEEN observed that this "crisis" may be a good thing in the long run if it teaches us something about conservation and efficient use of our energy resources. And it is certainly true that we are, as a society, far too dependent upon a non-renewable resource—fossil fuels. We need to invest more in clean sources of energy—hydro-electric power, solar power (all conventional forms of energy ultimately come from the sun), and nuclear power. We need to develop fresh sources of oil—from harvestable plants—and use it solely for lubrication and transmutation into plastics, etc. We undoubtedly need more efficient forms of transportation—mass transportation is still in the dark ages in most parts of this country.

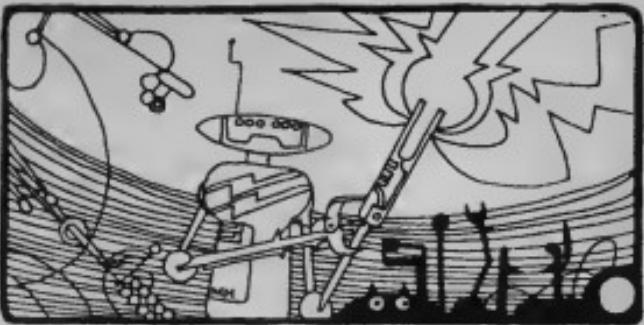
But equally important we need to drastically overhaul our concept of economic exchange. For as long as men or companies can profit by shortages like these, we'll continue to have them.

Technocracy, anyone?

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...OR SO YOU SAY



Letters intended for publication should be typed, double-spaced on one side of each sheet, and addressed to Or So You Say, Box 409, Falls Church, Va., 22046.

Dear Ted,

I really wish I didn't have to write this letter, because it seems like such a picayune thing—and I've always felt that our relations have been cordial, even if seldom.

However. . .

Your latest [December, 1973] issue of AMAZING (a very handsome and respectable issue, I might note) has a very unfortunate gaffe in it. I refer, of course, to Cy Chauvin's review of *Generation*, the anthology I edited.

Chauvin's remarks are unimportant; at this late date, more than a year and a half after the book's initial publication, whether he liked or disliked the stories is immaterial. Few bookstores stock the anthology any more, and most readers will have forgotten it by now; *Generation* will have been buried under several new "generations" of new writers by now, if anyone is keeping tally.

Chauvin's mistake—and I am surprised that you did not catch it—was the complete reprinting of one story in his review. The story, "The Shortest Science Fiction Story Ever Told," is only three words long. Admittedly it is only a gimmick; but I thought it was fun when I bought it.

Chauvin has committed a dangerous error. Certainly it is not uncommon to reprint part of a book, or even a story when one reviews it; but in this case that is certainly impossible to do without seriously compromising the writer's tale—and also to some extent, damaging the possible sales of the anthology by giving away one of the stories in it for free. (I know what I said above, the point is still valid.)

I'm sure you, as a writer, recognize that it is a dangerous precedent for a reviewer to completely reprint a story in his review. Further, you as an editor, should recognize that it is extremely bad form to reprint a writer's story without paying him for it.

I ask two things—the first, more care in future reviews of anthologies; and the second, payment

to Roger Deeley for reprint rights on his story, "The Shortest Science Fiction Story Ever Told." After all, you did reprint it in AMAZING.

By my records, I paid Deeley for ten words, counting the title. His address is [deleted] England. I'm sure he will appreciate the added remuneration from his story, pit-tance though it might be.

Or, if you wish, you can forward the check to me and I will send it on to him with an explanation and some other correspondence I want to share with him.

I hope you'll agree with me that this is a fair solution, and that you will take care of this immediately. I might also ask that you suggest to Cy Chauvin a little more discretion in his quoting, as he has put you in the position of having to spend funds that I'm sure you would rather direct to your regular writers. But an editor must take care of his writers.

Hoping for a quick and positive action on your part,

DAVID GERROLD
Hollywood
Ca., 90028

I have sent a check for 9¢ (3¢ a word) to David Gerrold for the inadvertant "reprinting" of Roger Deeley's "The Shortest Science Fiction Story Ever Told," but I must go on record in opposition to this sort of time-wasting nonsense. I feel that Cy's review was, in this regard, entirely proper. I might cite as precedent the quotation in full of short works of poetry in reviews of volumes of poetry, for example. But

what it comes down to is this: Deeley's piece was a "story" only because Gerrold sought to dignify it as such; it was in fact "admittedly. . .only a gimmick," and in the opinion of both the reviewer and myself, not much of one. To characterize Chauvin's quotation of all three words of the "story" as "a dangerous error," "seriously compromising the writer's tale—and also to some extent, damaging the possible sales of the anthology" (". . .more than a year and a half after. . .publication" at a point when "few bookstores stock the anthology any more"?") "by giving away one of the stories in it for free," and also as "a dangerous precedent," seems to me the projection of a mountain from a molehill.—TW

Dear Ted,

Would you, if you have the space, insert the following notice in your mags.

The 25th annual MidWestCon will be held on June 28th, 29th and 30th, 1974 at the Quality Inn, 4747 Montgomery Road, Cincinnati, Ohio 45212. For further info and registration card contact Lou Tabakow, 3953 St. Johns Terrace, Cincinnati, Ohio 45236.

See you in June.

LOU TABAKOW
3953 St. Johns Terrace
Cincinnati, O., 45236
I'll be there!—TW

Dear Mr. White:

William Rotsler, in his "Immortality of Lazarus" has explored accu-

rately the mind and "morality" of a man pursuing biological immortality. How do I know? Because I am such a man. I am a man who readily acknowledges the primacy of self interest and who will stop at nothing to continue living. Why? Because I believe the purpose of life is largely synonymous with its continuance.

Nor am I alone in the quest for immortality. There are others, we are small in number and often disunited, but nevertheless we exist. We comb scientific journals and medical research periodicals for pertinent information on new advances. Some of us are tucked away in graduate schools working on methods for viable preservation for organs (and ultimately intact mammals including man) in the solid state through freezing. Others of us, pigeonholed in universities and medical facilities around the country for the key to controlling and reversing the aging process.

On both of these fronts progress has been made. Infusion of 10% to 15% dimethylsulfoxide (DMSO) or glycerol now allows routine banking of blood, bone, skin, and sperm. Several researchers, directly affiliated with the Georgia Cryothermia Society are now developing methods for banking whole organs in the liquid state by utilizing concentrations of DMSO approaching 60% and temperatures close to that of dry ice (-79°C). In Gerontology, Denham Harman of the University of Nebraska Medical Center has succeeded in extending the life span of male mice almost 50% by the ad-

dition of Butylated Hydroxytoluene (BHT; an antioxidant commonly used as a food preservative) to the animal's diet. Prominent Gerontologic researcher Johan Bjorksten has recently isolated a number of low molecular weight enzymes which have successfully decomposed crosslinked brain (human) age pigment. These enzymes have been shown to be nontoxic in animals and may be significant advance toward the reversal of the aging process.

For those of us who die now, equipment is constantly maintained in readiness to allow perfusion of DMSO through the vasculature in increasing concentration in such a way as to minimize its toxicity and allow for storage in the near viable state at dry ice or liquid nitrogen temperatures (-196°C). Approximately 18 of us have been treated in the fashion and now wait until some time as medical science has advanced sufficiently to reverse not only the pathology which caused clinical death, but also the damage incurred in cooling to ultra low temperatures. In short, we too believe that "the state of the art is bound to improve."

Mr. Rotsler's attempt at moralization is as empty of meaning as it is empty of understanding of the human will to survive. Only a living man can fear, or love, or hate. A dead man feels nothing, not even regret. He feels nothing because he is nothing; he isn't asleep or in blackness, nor is he in paradise or hell, he just isn't anything at all

other than a mass of rotting organics. Mr. Rotsler fails completely to understand that others are important only where they concern us. By our continued existence at our heretofore unparalleled level of luxury we are undoubtedly condemning hundreds of thousands of starving Indians to death. We do it because we want to survive and what's more, because we want to survive in style.

There *are* those of us who refuse to accept the shackles of morality. We long for vastly enriched and extended senses and intellects. We long for the stars; for the universe, and we'll damn take it! We *will* have the immortality of Lazarus and much, much more. If necessary, we will walk over a stack of corpses of our own making to get it.

MICHAEL D. FEDEROWICZ,
Co-Chairman
Georgia Cryothermia Society

P.O. 2761

Augusta, Georgia 30902

It seems to me that, far from contradicting Rotsler's "attempt at moralization," you have confirmed it. —TW

Dear Mr. White:

I just got an eyefull of L. Boutillier's "Top Fifty" list, and I'm beginning to understand why every one of your correspondents express such a low regard for his pronouncements.

First of all, it's by no means certain that there *are* 50 SF writers who deserve to be singled out. I'd be

inclined to name perhaps 12-15 who do excel; there might be another 20 or 25 who, though less conspicuous, are worthy of mention. As for the rest, we could say that there is a 150-way tie for 41st on the list—or, better yet, that their work is ordinary at best. Boutillier himself lists only 48. (Is that his mistake, mine, or your printers?)

His list is unsatisfactory both for the names he omits and for those he includes. Only 19 of his names do I feel undoubtedly worthy of consideration. Another 15 are, to my mind, obviously minor or hack writers, or have not yet produced enough to qualify as "immortals." The remaining 13 I haven't read or don't recognize, and I feel that if they haven't made an impact on me, then they must be lightweight indeed. I could name 40 or so writers Lester omits, any of which would outshine most of those he includes.

Please don't misunderstand—I don't set any list as a definitive guide—but Jack Haldeman over Theodore Sturgeon??!! I've read one or two of Haldeman's works, but I don't even vaguely remember what any of them were about. Try me on Sturgeon, chapter & verse.

Chris Anvil's best isn't in the same league with Poul Anderson, who hasn't written one mediocre page. Anvil at his best is passable. His worst is garbage. I haven't seen Anvil outside *Astounding/Analog*—and that tells you how little ability he has. [Christopher Anvil has appeared a number of times in these

pages.—TW] No offense to Cory Panshin—I loved "Son of Black Morca"—but she has no business with a separate listing until she writes separately. Alexei can write. Let's suspend judgment on her.

There are some writers Boutillier has excluded from ignorance. Stanislas Lem is the world's most popular SF writer, but I could not nominate him, not having read him. Lester, do you exclude him due to distaste for his works, or from an ignorance of Polish? Either way, there is no excuse for omitting Karel Capek. His works have been available in English for 50 years. Capek invented the word "robot."

I'm not pleased with seeing Judith Merril's name listed, either. Without deprecating her talents, I wish to remind all and sundry that she is an editor. This she does well, but she has written precious little—fairly well, but nothing matching *Dune* (Frank Herbert) or *Stand on Zanzibar* (John Brunner). There are those whose SF talents lie in critic/editing instead of writing, and do not belong on a top writing list (e.g. Damon Knight, Lin Carter, Ted White, Algis Budrys, Sam Moskowitz.)

Enough preface. Lists (with comment):

First, the cream of Lester's List—19 strong:

Ballard (fading away), Blish, Burroughs, Campbell, Clement (barely), Dick (says it poorly, but has it to say), Dickson (best of the *Analog* stable), Ellison (where's that novell!), Gernsback (pioneer. I

won't crowd out a writer to keep him on the list.) LeGuin, Leinster, A. Panshin, C. Smith, E. Smith (on uncertain ground, but I Liked.) Verne (c.f. Gernsback), Vance, Weinbaum, Wells, Wilhelm.

There aren't any real giants in the above group, but the next batch fades into insignificance:

Anvil, Bixby (who he?), Bova (bovine), Carr, DeFord (pleasing but minor), del Rey (I'm probably wrong here), Haldeman, Hoyle (like reading lead), Merril, Moore (almost), Nolan, Hamilton (hack-work. Don't need both him and "Doc" Smith), Russell, Williamson, Wollheim, Russ (Might make it, given time to develop.)

These next I haven't read, or maybe I did & forgot.

Binder, Brackett, Gerrold (saw his name on *Planet of Apes* sequel. Some qualification!) Green, Foster, Haggard, Hoskins, Keyes (wrote one notable book, *Flowers for Algernon*. I bought it years ago, didn't bother to make time to read it. Don't care to now. I've been trying for years to find a copy of Van Vogt's *Slan* and *Players of Null-A*. Would start either tonight.) Lupoff, Merritt, O'Neill, C. Panshin, Sellings.

I now propose some alternatives to the clutter of nobodies listed above. If some seem a trifle light, weigh them against Carr, Wollheim and Company. I'd be willing to put the top 20 from my "Leftover List" against his fifty—and Lester could have chosen these first.

Brian Aldiss, Poul Anderson

(Lester doesn't like his politics. Anvil uses the same plot lines as Anderson, so why isn't he on the piglist? Any SF rating with a dozen names is a joke if Poul is excluded.) Asimov (Lester isn't a political bigot—just an incompetent critic.) Alfred Bester, Ray Bradbury, Brunner, Capek, Arthur Clark, A. Bertram Chandler (my whim), Samuel Delany, Sprague de Camp, Lord Dunsany (given a liberal SF definition), Robert Howard (Conan), Frank Hebert, Heinlein, Kuttner, Keith Laumer, R. A. Lafferty (Dammit, when you read a story by one of these two, you don't forget who wrote it or what it was about ten minutes later!) Anne McCaffrey (next to Dickson the best of the *Analog* crowd.) Moorcock, William Morris (c.f. Dunsany), C.S. Lewis (One of the dozen best writers of the century. Let's adopt him, Orwell and Huxley.) Kornbluth, George MacDonald (c.f. Morris), McKenna (*Sand Pebble*. SF merit questionable), Larry Niven, Andre Norton (Yes, Virginia, quantity counts), Edgar Pangborn, Fred Pohl, Silverberg (he once wrote the same drivel as Wollheim, but he's learned his trade.) Simak, Sturgeon, Van Vogt (Damon Knight is credited with demolishing him, but no one has found it worth the effort to target on Knight.) Philip José Farmer (My oversight. That's one reason I don't care to have anyone take this seriously as an authoritative, definitive list. I may have excluded others I have no intention of slighting. Always got del

Rey & Farmer confused anyway.) Kurt Vonnegut, John Wyndham (you look him up, Lester.) Zelazny, Lewis Padgett, Ron Goulart (lightweights, perhaps, but with a light touch.).

There are others who come to mind, but I hesitate, because I haven't read them, or they're hard to call SF writers:

Lem, Pierre Boulle (wrote *Planet of the Apes*, which I thought a lousy book.) Rod Serling, Lovecraft, Curt Siodmak, Charles Beaumont, William Tenn, E.R. Eddison, Spinrad, Saberhagen (Are he & Tenn heavy enough?).

The names I suggest are by no means meant to indicate my own list. I'd probably not include them all, were I to put one together—indeed, I might use some of Lester's choices I discarded. Really, I think the idea of a Top 50 List futile and ridiculously pompous—for me. After all, if it's not in paperback, I haven't read it. I don't read any other language. I haven't been reading regularly in SF for 3-5 years. And I don't often gamble with new authors. Thus I missed more than I should have of Moorcock. Maybe one of the names I so cavalierly dismissed is on his way to winning a Hugo. Really, I doubt I qualify as a fan. I do not subscribe to anything. I buy a mag only if I see a name I recognize on a novel. When it's *Analog*, I read the Dickson or McCaffrey; I don't expect quality in *Analog*, and it doesn't disappoint me. FANTASTIC/AMAZING has strong features with good variety.

The letters/books/editorial are good. The shorts are sometimes excellent, sometimes hideous—often in the same issue. *Galaxy* & *If* have shorts of uniform good quality, but I don't always find the feature tempting enough to buy. *F & SF* hasn't had a strong enough feature in a long while, to tempt me to buy it, but I'll probably first submit my first short story to them.

And now my last list! Boutillier asked for a fiftieth name. I fear that he won't take it from my list. He should have heard of every author I named, so undoubtedly he has eliminated the above. I Herewith list authors with no business among the elite:

Piers Anthony (*Chthon* didn't atone for those awful *Galaxy* "Dentist in Space" shorts. What a lousy contrived, disjointed "Deus ex machina" ending. Maybe his proposed novel has come out and has washed out the bad flavor those left.) Perry Chapdelaine (what did *If* see in him? Maybe it's Lester's nom de plume. I recognize the style.) Jerry Pournelle (One serial and he's already third best in *Analog*'s stable. *Spaceship for the King* beats Anvil's best—faint praise, but I'd watch him.) James Schmitz (*Analog*, worse than Anvil.) Ted White (competent sword-sorcery) Zenna Henderson (the Emily Loring of SF), Bob Shaw, Raymond Jones (We had to tolerate him & Hamilton in the '30's. No more!) Lin Carter (c.f. White) David R. Bunch (Never acquired the taste. Lafferty says it better.)

Mack Reynolds (*Analog*. Falls between Anvil and second-rate Laumer.) Algis Budrys (Liked some of his, but *Iron Thorn* was letdown. Even his best was murky, like second-rate Herbert.) Disch, Malzberg, Eklund, Galouye, James White, Michael Kurland (give him time).

These are all names you have seen. Others you haven't because they weren't fit to be published, or their work wasn't worth noticing.

I know I'll get argument. Some I'll deserve for having overlooked somebody. (I can think of two names now.) I weigh myself with '60's SF. I don't have an encyclopedic knowledge of the "classics," and don't keep up to date. I daresay, however, that you'd prefer a list compiled from my selections to Lester's List.

THOMAS C. WATSON
2604 Dowling Ave.
West Orange, Tex. 77630

Frankly, I find your list as lopsided as Lester's. I'm not going to match opinions with either of you, but your ignorance is obvious in your categorization of many of the names you list. (For instance, the bulk of my own work—thirteen novels and twice as many short stories—is not by any stretch of the imagination "sword-sorcery," whatever else you may think of it.) If you want to go on comparing lists, I suggest you check the Hall of Fame anthologies compiled by the Science Fiction Writers of America; they reflect a much informed set of tastes.—TW

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